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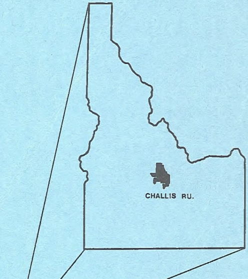
CHALLIS PLANNING UNIT



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DRAFT SUPPLEMENTAL ENVIRONMENTAL STATEMENT

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REVISED RANGE MANAGEMENT PROGRAM FOR THE CHALLIS GRAZING UNIT

Prepared by

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
IDAHO STATE OFFICE

Wm. L. Mathews
State Director, Idaho State Office

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SUMMARY

(X) Draft ( ) Final Supplemental Environmental Statement

Department of the Interior
Bureau of Land Management
Idaho State Office

1. Type of Action: (X) Administrative ( ) Legislative

2. Brief Description of Action: The Bureau of Land Management proposes to implement an improved range management program on public lands within the Challis Planning Unit of the Salmon District in east-central Idaho. The components of the proposed action are: (1) allocation of forage for the grazing ungulates (livestock, horses and wildlife); and (2) implementing grazing treatments on 330,130 acres of public land consisting of rest-rotation grazing on 227,839 acres, deferred-rotation grazing on 21,495 acres, and seasonal-continuous grazing on 80,788 acres.

3. Summary of Environmental Impacts: Runoff and erosion would decrease as a result of improved watershed conditions; vegetation would improve in quantity and quality; terrestrial wildlife habitat would improve; aquatic and riparian habitat would improve; livestock forage would increase; area income would decrease.

Short-term adverse impacts would include reduced vegetation vigor and reproduction due to spring and summer grazing on seasonal use areas and rest- and deferred-rotation use pastures. Wildlife communities would change as a result of changing ecological conditions. Long-term adverse impacts would include some stream bank deterioration by grazing and trampling.

4. Alternatives Considered:

   a. Continuation of present management (no action).
   b. Elimination of livestock and wildhorse grazing.
   c. Minimum constraints on livestock grazing.
   d. Minimum constraints on wildlife.
   e. Minimum constraints on wild horses.
   f. Reduced levels of grazing by large ungulates.

5. Comments have been requested from: See attachment.

6. Date statement made available to EPA and the public:

   Draft:

   Final:

ATTACHMENT

Comments on the Draft Supplemental Environmental Statement have been requested from the following agencies, interest groups, and individuals. Public hearings will be held at the American Legion Memorial Building in Challis, Idaho, on September 6, 1978, and at the Rodeway Inn in Boise, Idaho, on September 7, 1978.

Federal Agencies

- Advisory Council on Historic Preservation
- Department of Agriculture
  - Agricultural Research Service, Pasture and Range Management Research
  - Forest Service
  - Soil Conservation Service
- Department of the Interior
  - Bureau of Indian Affairs
  - Bureau of Mines
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - Heritage Conservation and Recreation Service
  - National Park Service
- Department of Transportation
  - Federal Highway Administration
- Environmental Protection Agency
- National Historic Advisory Council

State Agencies

- State of Idaho
  - Governor's Clearinghouse

Local Government

- Custer County Commissioners
- Custer County Planning and Zoning Commission
- Custer County Economic Stabilization Committee
- Mayor of Challis

Other Organizations

- Ada County Fish and Game League
- American Association of University Women
- American Horse Protection Association
- American National Cattlemen's Association

Other Organizations (cont.)

- American Sheep Producers Council, Inc.
- Boise State University, Dept. of Societal and Urban Studies
- Cattle Feeders Assn. and Food Producers Assn.
- Council for Agricultural Science and Technology (CAST)
- Defenders of Wildlife
- Friends of the Earth
- Idaho Archaeological Society
- Idaho Association of Soil and Water Conservation Districts
- Idaho Cattlemen's Association
- Idaho Chapter Wildlife Society
- Idaho Conservation League
- Idaho Environmental Council
- Idaho Farm Bureau
- Idaho Federation of Women's Clubs
- Idaho Mining Association
- Idaho Public Land Resource Council
- Idaho Range Development Committee
- Idaho Resource Development Council
- Idaho Wool Growers Association
- International Society for Protection of Mustangs and Burros
- Lemhi County Cattlemen's Association
- Little Lost River Grazing Association
- Montana Wildlife Federation
- Morgan Creek Cattlemen's Association
- National Council of Public Land Users
- National Mustang Association
- National Wildlife Federation
- Nature Conservancy
- Natural Resources Defense Council, Inc. (NDRC)
- Nevada Cattlemen's Association
- Office of the Prosecuting Attorney, Custer County
- Oregon Environmental Council
- Oregon Soil and Water Conservation Committee
- Pacific Legal Foundation
- Public Land Council
- Salmon Chamber of Commerce
- Salmon District Advisory Board
- Salmon River Electric Co-op, Inc.
- Sierra Club
- Society for Range Management
- Sport Fishing Institute
- The Humane Society of the United States
- The Intermountain Company

- The National Association of Conservation Districts
- The Wildlife Society
- Tri-County Cattlemen's Association
- Utah Mustang Association
- Wilderness Society
- Wild Horse Organized Assistance (WHOA)
- Wildlife Management Institute

Universities

- Boise State University, Dept. of Societal and Urban Studies
- Idaho State University, Biology Dept.
- Idaho State University, Curatory Archaeology
- New Mexico State University, College of Agriculture and Home Economics
- University of Idaho, College of Forestry, Wildlife and Range Sciences
- University of Idaho, Cooperative Extension Service, Custer Extension Agent
- University of Idaho, Cooperative Extension Service, Lemhi Extension Agent
- Utah State University, Environment and Man Program

Congressional

- Office of Senator Church
- Office of Senator McClure
- Office of Congressman Symms
- Office of Congressman Hanson

Challis Unit Grazing Permittees

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Chapter 1

Description of Proposed Action

BACKGROUND

This supplemental Challis Environmental Statement (ES) was prepared in compliance with Section 102(2)(c) of the National Environmental Policy Act (NEPA), 42 U.S.C § 4321 et. seg. It gives site specific analysis of the environmental effects of grazing management on the public lands under the jurisdiction of the Bureau of Land Management (BLM).

A note to reviewers from BLM Director Curt Berklund which was attached to the Final Challis Environmental Statement released January 1977, identified the need for additional soil and vegetation data and preparation of a supplement using the new data. In addition to soil and vegetation, new inventory information regarding wildlife habitats and populations, and anadromous fishery habitats was collected during the 1977 field season. This new inventory information was used to update the Challis Management Framework Plan (MFP).

The proposed action was developed from MFP recommendations which allocate available forage within the Challis Planning Unit to domestic livestock, grazing big game species, and wild horses. This proposal does not identify allotment management plans (AMPs) for each allotment grazed by domestic livestock as proposed in the original document. Analysis is directed toward major federal action determining the level of grazing that will be sustained within the planning unit by allotment and the allocation of this forage resource to competing grazing ungulates.

The number and names of allotments identified in the original document remain the same. Boundaries of four allotments (Warm Springs, San Felipe, Road Creek, and Split Hoof) have been modified and some adjustments have been made in acreages shown due to recompilation.

The 352,182-acre unit encompasses 330,122 acres of public land, 18,046 acres of state land, and 4,014 acres in private ownership (Map 1-1 and Table 1-1).

The original final Challis ES is available for review at the Salmon BLM District Office, the BLM Idaho State Office, and BLM Washington Office. Portions of the original document referred to in this document will be made available upon request to the Idaho BLM State Office.

TABLE 1-1
CHALLIS UNIT ACREAGE BY OWNERSHIP AND ALLOTMENT

Allotment	Public Land	State	Private	Total
Red Lake	23,195	1,346		24,541
Herd Creek	22,050	2,020		24,070
Road Creek	15,565	1,127		16,692
Bruno Creek	2,378			2,378
Round Valley	13,503			13,503
San Felipe	81,316	4,759	1,208	87,355
Warm Springs	59,703	3,018	80	62,801
Garden Creek	30,458	880	213	31,551
Bald Mountain	22,597	604	1,009	24,246
Thompson Creek	5,595		239	5,834
Split Hoof	8,415	848		9,263
Squaw Creek	7,044	477	765	8,286
Spud Creek	8,856	240		9,096
Pine Creek	5,026			5,026
East Fork	11,715	1,500		13,215
Sullivan Creek	3,570	400	300	4,270
Malm Gulch	9,136	791	128	10,055
	330,122	18,046	4,014	352,182

PROPOSAL OVERVIEW

Idaho's BLM Salmon District Office proposes to implement an improved range management program on public lands within the Challis Planning Unit of the Salmon District in east central Idaho. The proposed levels of grazing use are shown in Table 1-2.

TABLE 1-2

SUMMARY OF THE PROPOSED ACTION AND THE EXISTING SITUATION

Grazing Animals	Present Use, AUMs Livestock Use 8-yr. Average	Proposed Use
Cattle	17,444	10,436
Wild Horses	8,790	2,430
Grazing Wildlife	6,758 1/	7,772 2/
Total	32,992	20,638

1/ Present forage use (Big Game).

2/ Forage demand for Idaho Department of Fish and Game population objectives (Big Game).

TABLE 1-3
COMPARISON OF NUMBER OF ALLOTMENTS AND LIVESTOCK OPERATIONS (EXISTING SITUATION AND PROPOSED ACTION)

	Number of Allotments	Number of Permittees
Proposed Action	17	38
Existing Situation	13	38

The proposal would be implemented after completion of MFP Step 3 of the BLM planning system. Implementation of all actions is scheduled to occur within five years after completion of MFP Step 3.

The livestock stocking rates and season of use would be implemented by District Manager's decision to the livestock operators. All intensive livestock grazing management imposed in addition to establishing a stocking rate and season of use would be included in an allotment management plan.

EVOLUTION OF THE PROPOSAL

The specific proposal to improve range management was developed from the BLM planning system (see Appendix 1 for description of planning procedures) MFP Step 2 multiple use recommendations for grazing ungulates. These recommendations resulted from an analysis of the various needs for forage. The recommendations formed a basis for the allocation of available forage to grazing ungulates that presently graze within the unit, and for the protection, maintenance and improvement of the unit's soil and vegetation resource.

Table 1-4 tracks recommendations affecting grazing animals through MFP Step 1. Step 2 identifies resource trade-offs resulting from resolving conflicting uses.

TABLE 1-4

DEVELOPMENT OF THE PROPOSED ACTION THROUGH MULTIPLE USE ANALYSIS

MFP 1 RECOMMENDATIONS	OTHER RESOURCES MFP 1 RECOMMENDATIONS THAT CONFLICT	MFP 2 RECOMMENDATIONS	RESOURCE TRADE OFFS
Livestock Grazing 1. Graze the proposed allotments at the maximum livestock carrying capacity consistent with proper management of forage species. 12,540 AUMs.	Maintain 340 wild horses. Provide forage for big game species. Protect watersheds. Protect anadromous fish habitat. Provide land for urban growth, industrial and agricultural development.	Livestock Grazing 1. Graze the proposed allotments at the following rate: 10,436 AUMs.	2,104 AUMs forage not available to grazing livestock.
2. Continue the present grazing system on the Herd Creek Allotment and implement grazing systems on 9 allotments; continue seasonal grazing on 7 allotments; no livestock grazing in the Malm Gulch Allotment.		2. Continue the present grazing system on the Herd Creek Allotment and implement grazing systems on 9 allotments; continue seasonal grazing on 7 allotments; no livestock grazing in the Malm Gulch Allotment.	
3. Develop range-facilitating projects to maintain the stocking level, develop grazing systems, and increaae forage production. a. 58 miles fence. b. 52 spring developments. c. 44.5 miles water pipeline. d. 31 water troughs along the pipeline. e. Plow and seed to palatable forage species 1,510 acres. f. Initiate brush control on 26,975 acres.	Do not construct fences in wild horse area. Do not allow livestock grazing on watersheds in poor condition. Fence conflicts with bighorn sheep movement. Provide land for urban and suburban development. Protect visual and cultural resources. Provide antelope winter forage and and protect visual and cultural resources. Remove existing fences for free movement of wild horses.	3. Develop range-facilitating projects to maintain the 10,436 AUM stocking rate and increase forage production. a. 54.1 miles fence. b. 51 spring developments. c. 44.5 miles water pipeline. d. 31 water troughs along the pipelines. e. Plow and seed 1,310 acres. f. Initiate brush control on 22,075 acres.	a. 3.9 miles fence for livestock management. b. 1 spring development to facilitate livestock management. c. Water pipeline - none. d. Water troughs - none. e. 200 acres seeded range. f. 5,900 acres brush control for increased production of livestock forage.

TABLE 1-4 (con't)

DEVELOPMENT OF THE PROPOSED ACTION THROUGH MULTIPLE USE ANALYSIS

MFP 1 RECOMMENDATIONS	OTHER RESOURCES MFP 1 RECOMMENDATIONS THAT CONFLICT	MFP 2 RECOMMENDATIONS	RESOURCE TRADE OFFS
4. Reduce wild horses to 39 animals, a level that does not compete for livestock forage.	Maintain 340 wild horses.	4. Maintain 162 wild horses.	178 wild horses.
5. Do not allow wildlife numbers to increase above the 15-year projections of the Idaho Fish and Game Department.	Provide 7,952 AUMs of forage for big game species.	5. Provide 7,772 AUMs forage for big game species.	180 AUMs forage for use by livestock.
Wild Horses 1. Maintain 340 wild horses within the area traditionally used in 1971.	Conflicts with livestock use in 5 allotments. Provide forage for big game species. Provide high quality habitat for non-big game wildlife. Protect watersheds.	Wild Horses 1. Maintain 162 wild horses within the area traditionally used in 1971.	178 wild horses.
2. Eliminate domestic livestock grazing on critical wild horse winter areas. 30,789 acres.	Conflicts with livestock use in 5 allotments.	2. Rejected the MFP 1 recommendation	Competition for forage from livestock.
3. Eliminate fences on the entire wild horse range and do not construct any new fences.	Prohibits livestock grazing management.	3. Rejected the MFP 1 recommendation	Present fences and proposed fences inhibit movement of wild horses.

TABLE 1-4 (con't)

DEVELOPMENT OF THE PROPOSED ACTION THROUGH MULTIPLE USE ANALYSIS

MFP 1 RECOMMENDATIONS	OTHER RESOURCES MFP 1 RECOMMENDATIONS THAT CONFLICT	MFP 2 RECOMMENDATIONS	RESOURCE TRADE OFFS
Wildlife (Terrestrial) 1. Provide forage for the following big game species: a. 394 elk - 774 AUMs b. 5,663 mule deer - 6,249 AUMs c. 1,120 antelope winter - 392 AUMs 906 antelope spring, summer, fall - 426 AUMs d. 850 bighorn sheep - 885 AUMs	Graze 12,540 AUMs by livestock. Maintain wild horse herd at 340 animals.	Wildlife (Terrestrial) 1. Provide forage for the following big game species: a. 317 elk - 561 AUMs b. 5,624 mule deer - 6,166 AUMs c. 1,120 antelope, winter 906 antelope spring, summer, fall - Total 818 AUMs d. 220 bighorn sheep - 227 AUMs	Forage will not be provided for the following big game species: a. 77 elk b. 39 mule deer d. 630 bighorn sheep
2. Exclude livestock and wild horse grazing on 2,291 acres of critical elk winter habitat and 15,991 acres of bighorn sheep habitat.	Graze 12,540 AUMs by livestock. Maintain wild horse herd of 340 animals.	2. Exclude livestock and wild horse grazing on 2,291 acres of critical elk winter habitat and 5,790 acres of critical bighorn sheep habitat.	Livestock and wild horses will compete for forage on 10,201 acres of bighorn sheep habitat.
3. Provide adequate high-quality habitats for all wildlife species.	Provide livestock 12,540 AUMs of forage. Maintain 340 wild horses. Needs for urban and suburban expansion industrial and agricultural development.	3. Recommendation modified for forage allocation.	Proposed action may conflict with this recommendation.
Wildlife (Aquatic) 1. Fence 22.5 miles (both sides) of important anadromous streams from livestock and wild horses.	Provide livestock 12,540 AUMs of forage. Maintain 340 wild horses. Do not fence wild horse range.	Wildlife (Aquatic) 1. Fence 3.25 miles (both sides) of important anadromous streams.	Impacts to stream banks would occur on 19.25 miles of important anadromous streams.

TABLE 1-4 (con't)

DEVELOPMENT OF THE PROPOSED ACTION THROUGH MULTIPLE USE ANALYSIS

MFP 1 RECOMMENDATIONS	OTHER RESOURCES MFP 1 RECOMMENDATIONS THAT CONFLICT	MFP 2 RECOMMENDATIONS	RESOURCE TRADE OFFS
2. Eliminate livestock and wild horse grazing from 20,352 acres in Horse Basin and Corral Basin watersheds.	Provide livestock 12,540 AUMs of forage. Maintain 340 wild horses.	2. Do not protect this area from grazing.	The area could continue to contribute heavy siltation to important game fish habitat.
Watershed 1. Do not graze more than 50 percent of the current year's production of forage plants used by grazing ungulates.		Watershed 1. Do not graze more than 50 percent of the current year's production of forage plants used by grazing ungulates.	
2. Do not allow domestic livestock and wild horses to graze lands with a high soil erosion hazard and poor range condition (77,363 acres).	Provide livestock 12,540 AUMs of forage. Maintain 340 wild horses.	2. Discontinue livestock and wild horse grazing on 13,041 acres.	64,322 acres with a high erosion hazard and in poor range condition would continue to contribute heavy siltation to perennial streams.
3. Fence 23 miles (both sides) of unstable stream banks from livestock and wild horse grazing.	Provide livestock 12,540 AUMs of forage. Maintain 340 wild horses. Do not fence wild horse range.	3. Fence 3.25 miles (both sides) of unstable stream banks.	Impacts to stream banks would occur on 19.75 miles of unstable stream banks.
Lands Provide 4,470 acres for the following: a. 230 acres urban and suburban expansion. b. 360 acres industrial development. c. 3,880 acres agricultural development	Livestock grazing. Wildlife habitat.	Lands Provide 1,110 acres for the following: a. 230 acres urban and suburban expansion b. 360 acres industrial development c. 520 acres agricultural development	3,360 acres would not go into agricultural development.

TABLE 1-4 (con't)

DEVELOPMENT OF THE PROPOSED ACTION THROUGH MULTIPLE USE ANALYSIS

MFP 1 RECOMMENDATIONS	OTHER RESOURCES MFP 1 RECOMMENDATIONS THAT CONFLICT	MFP 2 RECOMMENDATIONS	RESOURCE TRADE OFFS
Recreation (Visual Resource) Sagebrush removal should be accomplished on small areas.	Plow and seed 1,510 acres. Brush control on 26,975 acres.	Plow and seed 1,310 acres. Brush control on 22,075 acres.	Visual obtrusions to the landscape.
Cultural Resources Protect cultural resources.	Plow and seed 1,510 acres. Brush control on 26,975 acres.	Plow and seed 1,310 acres. Brush control on 22,075 acres.	Possible loss of cultural resources.

PROPOSED ACTION

Purpose and Objectives of the Proposed Action

The purpose of the proposed action is to manage the range program for stabilization of the basic soil resource and improvement of vegetative resources. This is required by law (Taylor Grazing Act, 1934, and the Federal Land Management and Policy Act, Public Law 94-579, enacted 1976).

Objectives of the proposed action are:

1. To supply 3,722 cattle 10,436 AUM's of primarily spring grazing in the Challis Unit.

2. To furnish year-long forage for an average number of 162 wild horses in the Red Lake, Road Creek, San Felipe/Peck Canyon, Warm Springs and Split Hoof Allotments (2,430 AUMs).

3. To furnish forage for big game species in the Challis Unit:

317 Elk During the Winter and Spring	561 AUM's
5,624 Mule Deer During the Winter and Spring	6,166 AUM's
1,160 Antelope in the Winter and 906 Antelope in the Spring, Summer and Fall	818 AUM's
220 Bighorn Sheep During the Winter and Spring	227 AUM's

4. Eliminate livestock and wild horse grazing on 18,831 acres for the protection of highly erodable soils and critical Big Horn Sheep habitat.

5. Protect 3.25 miles of anadromous fish habitat by fencing to protect stream banks from livestock and wild horse grazing and trampling.

6. Increase forage production by approximately 1,000 AUM's for livestock from vegetation manipulation projects.

These objectives would be accomplished when the proposed action is fully implemented or after five years.

7. Increase total livestock forage production to 17,500 AUM's within the 15 year time frame of the proposed action.

Components of the Proposed Action

Allocation of Available Forage and Grazing Treatments. At least 50 percent of all forage production (by weight) would be reserved for plant maintenance, soil protection and stabilization, and nonconsumptive habitat (see Appendix 2-A). All unpalatable vegetation would also serve to protect the soil resource and provide wildlife habitat cover.

For protection of the highly erodible soils in the Malm Gulch Allotment (9,136 acres) and Sand Hollow watershed (3,905 acres), all vegetation will be protected from livestock and wild horse grazing. Five thousand seven hundred ninety (5,790) acres of critical bighorn sheep winter habitat (3,908 acres in the East Fork Allotment, 585 acres in the Road Creek Allotment, 297 acres in the Spud Creek Allotment, and 1,000 acres in the Garden Creek Allotment) would be protected by fencing and 2,291 acres of critical winter elk habitat in the San Felipe/Peck Canyon Allotment would be protected from livestock grazing by not developing water. One thousand one hundred ten (1,110) acres of land in the Garden Creek, Red Lake and Warm Springs Allotments would be provided for urban and suburban expansion, industrial and agricultural development.

To exclude livestock grazing, 3.25 miles of riparian habitat on Herd Creek and Lake Creek would be fenced. The remainder of forage production is available to grazing ungulates and is allocated in Table 1-6.

Wild horse numbers would be controlled at an average level of 162 head. They would fluctuate between 100 and 200 necessitating a gathering program every four years.

TABLE 1-5
SUMMARY OF PROPOSED GRAZING MANAGEMENT TREATMENTS

MANAGEMENT TREATMENT	ALLOTMENTS	TOTAL AUMs	ACRES OF FEDERAL LAND IN ALLOTMENT
Rest Rotation - 5 Pasture	Warm Springs	2,201	59,703
Rest Rotation - 4 Pasture	Garden Creek	600	30,458
Rest Rotation - 3 Pasture	Herd Creek	1,411	22,050
	SanFelipe/Peck Canyon	3,484	81,316
	Bald Mountain	296	22,597
	East Fork	192	11,715
		5,383	227,839
Deferred Rotation - 2 Pasture	Squaw Creek	133	7,044
	Spud Creek	202	8,856
		335	15,900
Deferred Rotation - 3 Pasture	Thompson Creek	51	5,595
Seasonal (Spring)	Red Lake	613	23,195
	Road Creek	346	15,565
	Round Valley	438	13,503
	Split Hoof	118	8,415
	Sullivan Creek	85	3,570
		1,600	64,248
Seasonal (Spring,Summer & Fall)	Bruno Creek	85	2,378
Seasonal (Spring & Fall)	Pine Creek	181	5,026
No Grazing			9,136
Total		10,436	330,122

TABLE I -6

ALLOCATION OF FORAGE TO GRAZING UNGULATES AND PROPOSED GRAZING TREATMENTS

Allotment	Domestic Livestock (cattle)				Wild Horses		
	Numbers	Season of Use	AUMs	Specific Grazing System	Numbers	Season of Use	AUMs
Red Lake	307	5/1 to 6/30	613	Seasonal	22	Year long	330
Herd Creek	1/ 666	6/16 to 10/31	1,411	Rest Rotation, 3 pasture			
Road Creek	173	5/1 to 6/30	346	Seasonal	18	Year long	270
Bruno Creek	19	5/16 to 9/30	85	"			
Round Valley	219	5/1 to 6/30	438	"			
San Felipe/ Peck Canyon	630	5/1 to 9/29	3,484	Rest Rotation, 3 pasture	24	Year long	360
Warm Springs	755	5/1 to 12/15	2,201	Rest Rotation, 5 pasture	90	Year long	1,350
Carden Creek	300	5/1 to 6/30	600	Rest Rotation, 4 pasture			
Bald Mountain	148	5/1 to 6/30	296	Rest Rotation, 3 pasture			
Thompson Creek	10	5/16 to 10/15	51	Deferred Rotation, 3 pasture			
Split Hoof	59	5/1 to 6/30	118	Seasonal	8	Year long	120
Squaw Creek	67	5/1 to 6/30	133	Deferred Rotation, 2 pasture			
Spud Creek	101	5/1 to 6/30	202	"			
Pine Creek	129	5/16 to 6/10 10/1 to 10/16	181	Seasonal			
East Fork	96	5/1 to 6/30	192	Rest Rotation, 3 pasture			
Sullivan Creek	43	5/1 to 6/30	85	Seasonal			
Malm Gulch	0	None	0	No grazing		No grazing	
Total	3,722		10,436		162		2,430

1/ The Herd Creek grazing system includes 2 allotments on the National Forest.

TABLE 1-6 (Continued)

Wildlife

Allotment	Elk			Deer			Antelope			Big Horn Sheep		
	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs
Red Lake				450	W/Sp	496	70 30	Winter Sp,S,F	38			
Herd Creek	20	W/Sp	38	500	W/Sp	552						
Road Creek	2	W/Sp	4	425	W/Sp	469	65	Sp,S,F	26	30	W/Sp	31
Bruno Creek	16	W/Sp	31	125	W/Sp	54						
Round Valley				50	W/Sp	55	150 58	Winter Sp,S,F	78			
San Felipe/ Peck Canyon	140	W/Sp	271	175	W,Sp,S	239	570 333	Winter Sp,S,F	349			
Warm Springs				200	W/Sp	221	210 315	Winter Sp,S,F	219			
Garden Creek	40	W/Sp	25	1,025	W/Sp	1,130	40	Year long	33	80	W/Sp	83
Bald Mountain	10	W/Sp	19	1,000	W/Sp	1,102						
Thompson Creek	38	W/Sp	73	250	W/Sp	276						
Split Hoof				200	W/Sp	221	30	Sp,S,F	14			
Squaw Creek	36	W/Sp	70	284	W/Sp	316						
Spud Creek	5	W/Sp	10	290	W/Sp	319	120 15	Winter Sp,S,F	47	25	W/Sp	25
Pine Creek				200	W/Sp	221						
East Fork	5	W/Sp	10	300	W/Sp	330				85	W/Sp	88
Sullivan Creek	5	W/Sp	10	150	W/Sp	165	20	Sp,S,F	9			
Total	317		561	5,624		6,166	1,160 906	Winter Sp,S,F	818	220		227

Note: Of the total allocation of forage to wildlife (big game), only 337 AUMs are forage livestock could utilize. The remaining forage allocated to big game is in areas unsuitable for livestock grazing.

Description of Grazing Systems.

Seasonal Continuous Grazing (Seven Allotments, 80,788 Acres). Continuous grazing is season-long grazing by livestock, in the same area, year after year. This system is usually used when no other system is feasible or economical. Under continuous grazing, stocking rates must be low enough to insure that desired forage plants maintain vigor and produce seed crops.

Deferred Rotation Grazing (Three Allotments, 21,495 Acres). Deferred rotation grazing is any system of grazing which delays grazing in succeeding years on a portion of the range until a specific plant growth stage is reached. The entire range unit is used at sometime during the grazing system. Two or more pastures are necessary, the number being governed by the date the seed of the key forage plant matures and the desired season of use. Example: If the seed matures in the middle of the grazing season, two pastures are required; if maturity occurs after one-third of the grazing season has been completed, three pastures are needed, etc. Grazing is rotated among all pastures during the grazing season, except one, which is deferred each year until after seed of the key forage plants is mature.

Rest Rotation Grazing (Six Allotments, 227,839 Acres). Rest rotation grazing rests the range from grazing at suitable intervals dictated by the growth requirements of key forage plants. It is mainly useful to counteract the effects of the selective grazing habits of livestock. The system allows desirable forage species to recover vigor, produce seed and reproduce. Three or more pastures are most desirable each having approximately equal grazing capacity. Four basic treatments are applied to each pasture under this system. These are:

1. Graze the range.
2. Rest the range until plant vigor is restored.
3. Continue to rest range until seed ripens, then graze to scatter and trample seed.
4. Rest the range until seedlings become established.

These four steps may take three, four, five or more years to apply to a given pasture depending on the growth requirements of the key species. Completion of the yearly treatments culminating in establishment of reproduction constitutes a grazing cycle. During a grazing cycle, each pasture is given the prescribed yearly treatment, so some pastures are rested while others are grazed.

Support Requirements.

Range Improvements. Table 1-7 identifies the range improvement projects and vegetation manipulations by allotment.

TABLE 1-7

PROPOSED RANGE IMPROVEMENTS AND VEGETATION MANIPULATIONS

					VEGETATION MANIPULATION		
ALLOTMENT (ACRES)	FENCING (MILES)	SPRING DEVELOPMENTS	WATER PIPELINES (MILES)	WATER TROUGHS	BRUSH BEAT (ACRES)	PLOW & SEED (ACRES)	BURN (ACRES)
Red Lake		6	2.5	4	1200		
Herd Creek	None	None	None	None	None	None	None
Road Creek	None	7	8	2	None	None	None
Bruno Creek	None	None	None	None	None	None	None
Round Valley	None	3	5	1	None	None	None
SanFelipe/Peck Canyon	24	7	11.5	10	8600	None	None
Warm Springs	11	7	5.5	5	7500	None	None
Garden Creek	4	None	7	5	1295	1310	None
Bald Mountain	4.75	None	3.7	3	1500	None	None
Thompson Creek	None	None	None	None	None	None	None
Split Hoof	6	6	None	None	330	None	None
Squaw Creek	1.5	1	None	None	650	None	None
Spud Creek	1.8	4	.3	None	None	None	None
Pine Creek	None	5	None	None	None	None	None
East Fork	1	5	1	1	None	None	1000
Sullivan Creek	None	None	None	None	None	None	None
Malm Gulch	----	----	----	----	----	----	----
Total	54.1	51	44.5	31	21,075	1,310	1,000

Note: All projects would be implemented the first 5 years except for two brush-beating projects; 1,000 acres in the Warm Springs Allotment and 1,500 acres in the Bald Mountain Allotment, which would be accomplished in four treatments of one-fourth of the area at 3-year intervals; the entire project completed in 12 years.

(Vegetation Manipulation). Description of the vegetation manipulation treatments:

Brush Beating. Approximately 21,075 acres of sagebrush would be treated with a rotary-type brush beater. A single rotary cutter would cut a swath approximately seven feet wide. The cutter would be pulled at less than three miles per hour to prevent bouncing and inefficient cutting. This type of treatment would be accomplished during summer months when the sagebrush plants are most brittle.

Plow and Seed. Approximately 1,310 acres would be plowed by a brushland plow pulled by a track type tractor to kill the sagebrush. A rangeland drill pulled by a tractor would be used to sow a mixture of suitable grasses, forbs and browse seed. This plowing would be accomplished during summer months when greater percent kill of sagebrush would be accomplished. Seeding would be completed in the fall immediately following the plowing phase.

Burning. Approximately 1,000 acres would be burned in the fall. The first step in burning operations would be to establish a 50-foot-wide firebreak around the area to be burned. This would be accomplished by spreading a fire retardant on or water soaking two 20-foot-wide strips around the perimeter of the treatment site. Between the strips a 50-foot zone would remain intact. After fireproofing the strips, the 50-foot zone would be burned to establish the firebreak.

Later, when weather conditions permitted, backfires would be set adjacent to the downwind side of the firebreak to burn out the enclosed area. Firefighting equipment would be available at the site to minimize danger of fires escaping.

(Standard Operating Procedures). The following procedures would be followed in the construction of the proposed range improvements:

(1) Permanent roads or trails will not be constructed to project sites. Existing access and off-road vehicles would be used where needed.

(2) An archaeological clearance will be required for each project site before construction. Intensive surveys will be conducted to locate any cultural or paleontological remains present. If such remains are discovered, the improvement will be relocated or redesigned to avoid the remains. If the project cannot be moved, a mitigative data recovery or salvage program will be completed before construction. The clearance process will comply with relevant laws and required procedures throughout.

Permits required for construction will contain stipulations to protect buried resources and provide for additional surveys should project locations be changed.

(3) An endangered plant survey and clearance will be required for each project site before construction. If threatened or endangered plants are found and the range improvements would diminish the value of the habitat for the species encountered, the project will be relocated or abandoned.

(4) Disturbance of soil and vegetation at all project sites will be held to an absolute minimum. All disturbed areas will be reseeded with a mixture of native and/or introduced species as soon as possible in order to replace ground cover on the sites.

(5) Land clearing will be held to a minimum, generally restricted to sites requiring excavation.

(6) Areas of soil disturbance will be finished to blend into the surrounding soil surface.

(7) An endangered animal clearance will be required before any construction can be started. If threatened or endangered species are found and the improvements would lessen the value of the habitat for the given species, the project will be relocated or abandoned.

(8) Through thoughtful planning and good design, proposed range improvements will be made to blend gracefully with the natural landscape. The visual resource contrast rating will be conducted before the construction of the proposed improvements. Where the visual resource will be impaired, the range improvements will be modified by design, location or both as necessary to meet Visual Resource Management class objectives.

(9) Areas identified as having potential wilderness values will be evaluated before implementation of any proposed range improvements.

(10) Livestock watering facilities will provide water in allotments and rested pastures during determined periods of need for wildlife and wild horses.

(11) Livestock use on vegetation manipulation areas will be deferred for a minimum of two years following each project to assure adequate opportunity for the vegetation to establish.

(12) Bird ramps in watering troughs, lateral watering sites off pipelines, overflows at troughs and protected seep areas will be established for wildlife and wild horses use where the need is identified on new water improvements.

(13) Fence construction in identified wildlife use areas will follow guidelines set forth in BLM Manual Section 1737. Fences constructed in wild horse and burro use areas should have enough contrast with the surrounding environment so as to make them visible to wild horses and burros. Lay-down fences will be built in wild horse and burro areas wherever the need is identified and feasible.

(14) Spring developments will be fenced to prevent trampling and overgrazing of the adjacent vegetation.

(15) Water gaps and cattle crossings will be constructed in fences to be built along stream bottoms to allow livestock access to water.

(16) Areas that are plowed and reseeded will be protected from livestock grazing for two growing seasons. Areas that are burned will be protected for at least one growing season. If reseeded and burned areas are slow to re-establish sufficient cover, extended time would be provided for good establishment.

(17) All seedings and burns will be implemented during the fall to reduce the erosional hazards to the watershed.

Manpower Requirements. The District Office needs an additional eight permanent positions to develop and carry out the proposed action. It is assumed these people will be available when needed.

Monitoring Programs. Resource monitoring would be necessary to document changes occurring as a result of implementing the proposed action. Monitoring programs would be initiated during the first phases of implementation.

(Grazing Management Evaluation). BLM would ensure compliance with the grazing system and monitor the impacts of the system. BLM would issue licenses in accordance with the grazing regulations (43 CFR 4100) for grazing livestock on each allotment within the framework of the grazing system. The grazing license would specify the grazing area, livestock numbers and class, and season of use and AUM's to which the licensee is entitled. BLM employees would make routine allotment inspections to ensure that livestock numbers and time of grazing for each pasture comply with that authorized by the license. In accordance with 43 CFR 4100, grazing privileges would be reduced in whole or in part for as long as necessary when the range is depleted from drought or other causes. BLM would also control livestock trespass in accordance with the grazing regulations (43 CFR 4150)

Studies and evaluation procedures would be conducted on the grazing management program in accordance with BLM Manual Section 4412 to determine if the MFP and specific objectives are being met.

These studies typically include compilation of actual use, range trend, range/watershed condition, utilization, weather data, carrying capacity, and wildlife habitat monitoring. Similar studies and/or periodic visual checks would also be conducted on the allotments under limited (area-wide grazing) management. Where specific objectives are not met, adjustments in season of use, livestock numbers (including removal) or the entire grazing system would be made depending on indicated need. An Environmental Assessment Record (EAR) would be prepared prior to initiating any substantial change in grazing.

(Wild Horses). Wild horse monitoring would include:

1. Population structures and dynamics to determine changes, if any, recurring in herd population structure and dynamics.

2. Behavioral changes as a result of livestock management systems.

3. Intensity of horse use and the condition and health of horses using winter ranges.

4. The effect of all existing and proposed fences on horses. Provisions for change in the fences would be made when or if problems arose.

(Threatened or Endangered (TE) Plants). A system of monitoring either independently or in conjunction with other continuing range studies, would be initiated to determine trends in populations of endangered or threatened plant species.

1. A botanical survey of the unit would be undertaken at the earliest date to determine which TE plants are actually present, where they are located, and the extent of impact due to livestock use.

2. A system of monitoring, perhaps in conjunction with other continuing studies, would be undertaken to determine trends for TE plants.

3. Should it be determined that certain TE plants warrant protection, limited area would be set aside by fencing or some other form of livestock exclusion to ensure their survival.

(Cultural Resources). All eligible National Register resources in the unit would be monitored on a regular basis. Each resource site would be inspected at least semi-annually, and the inspections documented.

The monitoring program would provide data on the effectiveness of mitigating measures and other impacts which may develop. If, as a result of monitoring, the BLM becomes aware of adverse impacts occurring to specific cultural resources, the following appropriate mitigating measures, among others, would be undertaken: adjustments in livestock grazing management; site-specific cultural resource protection measures; salvage of cultural resources. Specific mitigating measures would be determined by the significance of the cultural resource and degree of impact.

BLM policy provides mitigation for all cultural resources being adversely impacted. To accomplish this objective, the BLM would develop a cultural resource management activity plan over the next three years. This plan would provide detailed data on non-National Register cultural resources and the degree of adverse impacts occurring. Once this plan is completed, the following mitigating measures, among others, would be undertaken where appropriate: adjustments in livestock management; site-specific cultural resource protection measures; salvage of cultural resources. Specific mitigating measures would be determined by the significance of the cultural resource and the degree of impact.

(Aquatic Life and Water Quality). Combined water quality and fish habitat monitoring studies, which could include protective exclosures, would be undertaken to document changes due to implementation of the proposed grazing systems and to provide a basis for changing management of livestock if objectives for water quality and fish habitat are not met. Monitoring would be conducted jointly with the U.S. Geological Survey in the Road Creek Watershed, using previous sampling stations in conjunction with several supplemental stations.

Standard water chemistry tests and physical measurements would be collected at predetermined time intervals to obtain valid conclusions from the data. Important physical parameter measures would include stream discharge, water temperature, turbidity and suspended sediments, which would provide estimates of sediment discharge. Bacteriological sampling would be monitored at weekly intervals during livestock treatments. Analysis would proceed concurrently with sampling.

After studies are completed, appropriate adjustments in the management of livestock grazing use would be made to mitigate adverse impacts.

(Wildlife). Wildlife studies would be established on crucial big game ranges to monitor habitat condition and trend, and to ascertain which grazing animals are primarily responsible for any habitat deterioration that occurs. Studies would also be performed to better delineate the actual use areas of each big game species in winter, and any fawning, calving, or lambing areas. An effort would be made to delineate sage grouse strutting, nesting, and wintering areas.

INTERRELATIONSHIPS

Federal Programs

The Herd Creek Allotment Management Plan (AMP), which has completed two years of treatment, is a joint plan with the Forest Service.

Twenty-four of the total thirty-nine operators graze the National Forest land. Livestock use on the public land is primarily spring grazing and the season of use corresponds with opening dates on the National Forest.

If grazing patterns on National Forest land contiguous to the Challis Unit are altered as a result of the National Park Service Sawtooth National Park Service Sawtooth National Recreation Area study now underway, four permittees could be affected.

State Programs

In 1975, Idaho Department of Health and Welfare (IDHW) contracted for an inventory of all federal, state, and local programs having nonpoint source pollution implications.

All wildlife within the Challis Unit is managed by the Idaho Department of Fish and Game. The BLM assumes the responsibility for managing habitat. The proposed action would affect many wildlife species, necessitating close coordination between the two agencies.

Private Programs

The proposed Tuscarora mine and mill operation consists of an open pit mine operation for molybdenite-bearing materials and a processing plant producing a concentrate of molybdenite mineral. Other components of the operation include waste storage, tailing pond and access roads. Total surface requirements would be about 1,331 acres or slightly more than half the acreage of the Bruno Creek Allotment. It is possible this would reduce the carrying capacity of the allotment by 50 percent, necessitating a revision in the proposed AMP if the proposal materializes.

Interdependence of Lands

The administration of public lands involves a complex interdependence between lands of different ownership, uses, capabilities and needs. The Challis area involves lands that are managed by the U.S. Forest Service, Bureau of Land Management, State of Idaho, and private parties. The use patterns of these lands have evolved over a long period of time, and a strong interdependence has developed in their management.

Private lands along the drainage bottoms have been used primarily for the production of forage crops to sustain livestock operations through winter months. These properties are also the land to which federal grazing privileges are attached. Some of the private lands are also used for commercial recreation purposes. Most of the private lands are dependent upon additional federal or state lands to sustain a yearlong cattle operation.

Public lands are used primarily for livestock grazing, wildlife habitat, recreation, and other resource uses. Livestock use is made primarily during spring and fall seasons.

Grazing use of public lands is dependent upon the capability of private lands to sustain livestock during early spring until the forage on public lands is ready for grazing. Public lands are also dependent upon U.S. Forest Service lands during late spring and fall seasons. During years when vegetation growth is late on Forest Service lands, the livestock must be held for longer periods of time on private, BLM or state lands.

Forest Service lands are dependent upon adjoining lands of different ownership. Adjoining lands must be relied upon to provide grazing, fire protection, and access to and from Forest Service lands.

Close coordination between the various land managing agencies is required in order to accomplish common goals and avoid resource use conflicts.

When allotment management plans are developed they may include National Forest lands or other lands as an aggregate.

ASSUMPTIONS AND ANALYSIS GUIDELINES

1. The proposed action or alternative Allotment Management Plans (AMPs) will be prepared and implemented over the five-year period following completion of the final environmental statement supplement.

2. When Allotment Management Plans are prepared, an environmental analysis will be made to assess the impacts of the grazing treatments and site specific impacts of range improvements and vegetation manipulations.

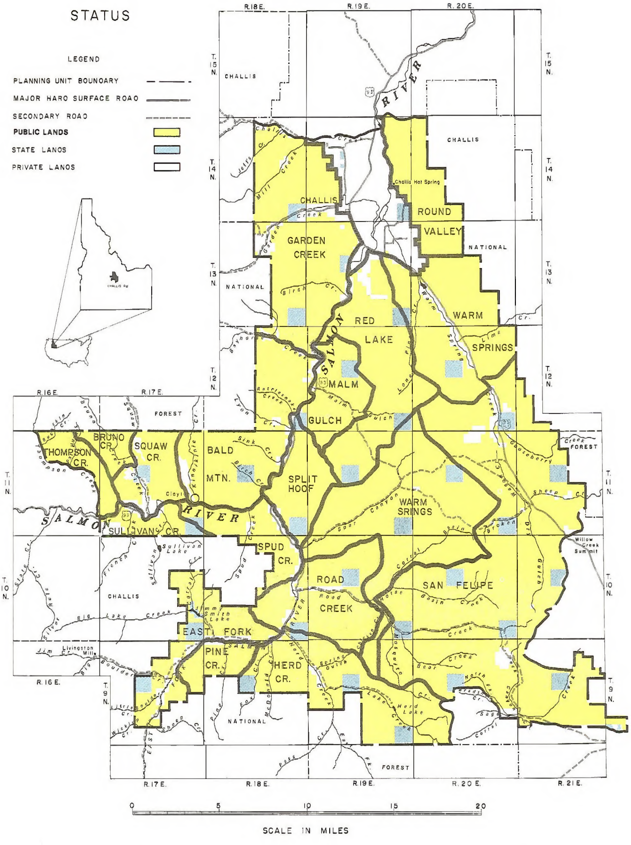
3. The Bureau of Land Management (BLM) will fund the improvements required to implement the proposed action, and do so within the stated time frame.

4. The necessary manpower will be furnished by and to the Salmon District, and a rigorous effort will be made to completely carry out the monitoring program.

5. There is an existing Allotment Management Plan for livestock grazing in the Herd Creek Allotment. This is a cooperative plan with the Challis National Forest. One pasture is on public land and two pastures are on the National Forest. This plan would be continued as presently stocked for two or more rotation cycles and at this time the allotment would be evaluated for effectiveness of the system.

6. In addition to the improvements described in the proposed action, the following existing improvements will be maintained in serviceable condition:

Spring Developments	65
Pipelines	12.92 Miles
Reservoirs	40
Wells	3
Fences	73.7 Miles
Cattleguards	17
Exclosures	4
Sagebrush Spraying	1,530 Acres
Grass Seeding	142 Acres
Bitterbrush Seeding	60 Acres
Stock Trails	19.2 Miles
Detention Dams	4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THOMPSON CR.
BRUNO CR.
SQUAW CR.
BALD MTN.
SPLIT HOOF
WARM SRINGS
SULLIVANS CR.
SPUD CR.
ROAD CREEK
SAN FELIPE
EAST FORK
PINE CR.
HERD CR.
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RIVER
Challis Hot Spring
Clayton
Sullivan Lake
Jimmy Smith Lake
Livingston Mill
Herd Lake
Willow Creek Summit
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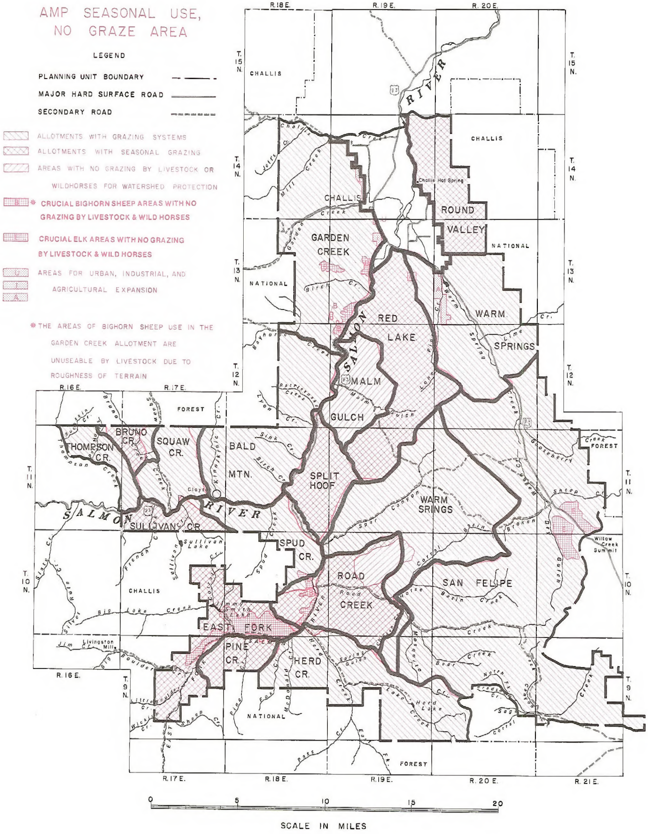
SCALE IN MILES

MAP 1-1 ALLOTMENT BOUNDARIES AND LAND OWNERSHIP STATUS OF THE CHALLIS UNIT


AMP SEASONAL USE, NO GRAZE AREA
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PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
ALLOTMENTS WITH GRAZING SYSTEMS
ALLOTMENTS WITH SEASONAL GRAZING
AREAS WITH NO GRAZING BY LIVESTOCK OR WILDHORSES FOR WATERSHED PROTECTION
B * CRUCIAL BIGHORN SHEEP AREAS WITH NO GRAZING BY LIVESTOCK & WILD HORSES
E CRUCIAL ELK AREAS WITH NO GRAZING BY LIVESTOCK & WILD HORSES
U I A AREAS FOR URBAN, INDUSTRIAL, AND AGRICULTURAL EXPANSION
* THE AREAS OF BIGHORN SHEEP USE IN THE GARDEN CREEK ALLOTMENT ARE UNUSEABLE BY LIVESTOCK DUE TO ROUGHNESS OF TERRAIN
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R.17 E.
R.18 E.
R.19 E.
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R.21 E.
T. 15 N.
T. 14 N.
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CHALLIS
NATIONAL
FOREST
SALMON RIVER
93
Challis Hot Spring
CHALLIS
ROUND VALLEY
GARDEN CREEK
RED LAKE
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BRUNO CR.
THOMPSON CR.
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WARM SPRINGS
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SPUD CR.
ROAD CREEK
SAN FELIPE
EAST FORK
PINE CR.
HERD CR.
Clayton
Willow Creek Summit
Sullivan Lake
Jimmy Smith Lake
Herd Lake
Livingston Mill
Challis Cr.
Jeffs Cr.
Mill Creek
Garden Creek
Birch Cr.
Bayhorse Creek
Rattlesnake Creek
Lyon Cr.
Malm Gulch
Lone Pine Cr.
Warm Spring Creek
Lime Cr.
Gooseberry Creek
Sheep Cr.
Spar Canyon
Broken Wagon Cr.
Dry Gulch
Corral Basin
Coffee Basin Creek
Road Creek
Bruno Creek
Squaw Creek
Buckskin Cr.
Thompson Creek
Kinnikinic Cr.
Sink Cr.
Birch Cr.
Spud Creek
French Creek
Sullivan Cr.
Slate Cr.
Rule Cr.
Silver Cr.
Big Lake Creek
Jim Cr.
Big Boulder Cr.
Little Boulder Cr.
Wickiup Cr.
Sheep Cr.
East Fork
Pine Cr.
Fox Cr.
McDonald Cr.
Spring Gulch
Lake Creek
Mosquito Cr.
Bear Creek
North Fk.
Bradshaw Cr.
Sage Corral
Horse Canyon
Pass Cr.
East Fk.
Creek
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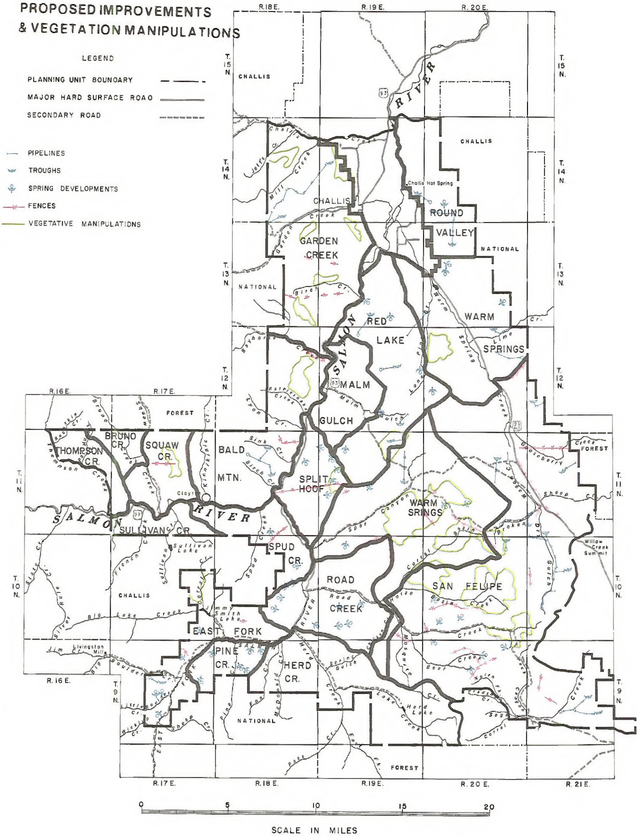
SCALE IN MILES

MAP 1-2 PROPOSED GRAZING TREATMENTS AND NO GRAZING AREAS


PROPOSED IMPROVEMENTS
& VEGETATION MANIPULATIONS
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PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
PIPELINES
TROUGHS
SPRING DEVELOPMENTS
FENCES
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ROAD CREEK
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PINE CR.
HERD CR.
Challis Hot Spring
Clayton
Willow Creek Summit
Sullivan Lake
Jimmy Smith Lake
Herd Lake
Livingston Mill
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SCALE IN MILES

MAP 1-3 PROPOSED RANGE IMPROVEMENTS AND VEGETATION MANIPULATION AREAS

Chapter 2

Description of the Environment

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Back of Chapter 2 heading sheet

VEGETATION

The 13 broad vegetation types found within the ES Area are shown on Map 2-1. Table 2-1 identifies the major vegetation species associated with each broad type. The condition class, apparent trend, and forage production data for each broad type is also presented on Table 2-1. For specific condition, trend and forage production by vegetation type and allotment, refer to Table 2-1 and 2-2.

Range Condition - Defined as the present state of the vegetation within a range site in relation to the climax (natural potential) plant community for that site. It is an expression of the relative degree to which the kinds and amounts of plants in a community resemble that of a climax plant community for that same site.

Four classes are normally used to express the degree to which the composition of the present plant community reflects that of climax.

Condition Class	Percentage of the Present Plant Community that is Climax Vegetation
Excellent	76-100
Good	51- 75
Fair	26- 50
Poor	0- 25

Condition class ratings for the vegetation within the ES Area are as follows:

Good - 33,815 acres (12% of the total area)
Fair - 145,440 acres (52% of the total area)
Poor - 103,567 acres (36% of the total area)

Table 2-1 illustrates present and potential AUM production under proper use levels during spring and summer grazing for each allotment.

Trend - The trend of range condition is a determination of whether the range is improving, deteriorating or remaining stable. Trend is usually referred to as upward, downward or static. Factors used in determining trend are changes in vegetative composition, abundance of seedings, amount of plant residues, plant vigor and condition of the soil surface. For specific trend data by vegetation type and allotment see Table 2-1. Present trend data is as follows:

Upward - 12,790 acres (4% of total area)
Downward - 72,977 acres (22% of total area)
Static - 197,055 acres (60% of total area)
Rock, Doug.
Fir, Burn 47,300 acres (14% of total area)

Suitability for Livestock Grazing - A vegetation inventory was conducted for the ES Area in 1977. During the inventory, a suitability rating was given to all public lands in the area. The suitability was based on steepness of slope, availability of water, and productivity of the vegetation within a given area. For specific criteria used in determining suitability see Appendix 2-C.

See Appendix 2-A for an explanation of the methodology used in conducting the vegetation/soils inventory and Appendix 2-D for determining vegetation condition and trend.

Poisonous Plants - Four species of poisonous plants occur in the Challis Unit: halogeton, death camas, larkspur, and water hemlock.

Halogeton is not abundant throughout the unit, but is found in small scattered patches, particularly in disturbed areas and along frequently graded roads at lower, drier elevations. It is found on Bradbury Flat near the junction of the road to Poverty Flat, Sink Creek, and the old Bower Ranch. It is also found on some roads in the Round Valley Allotment, the road to Horseshoe Detention Dam and along Warm Springs Creek.

Death camas is present early in the spring on some well-drained soil areas that receive abundant spring moisture. It has not caused significant animal losses to date.

Larkspur has caused problems in the upper Sink Creek drainage and measures have been taken to control it. Other areas have larkspur, but no incidents of poisoning have been reported.

Water hemlock is present but has not posed a problem.

TABLE 2-1

VEGETATIVE TYPES, CONDITION AND FORAGE PRODUCTION

Vegetative Type	Major Associated Vegetative Species	Total Acres (Public)	Percent of Total	Condition Class a/ (Acres) (Poor)	(Fair)	(Good)	AUMs Available For Livestock
Wet Meadow	Sedge, Kentucky bluegrass, roses, currants, willows, rushes.	424	0.1	121.8	227.4	74.8	522
Wyoming Big Sage	Wyoming big sagebrush, bluebunch wheatgrass, Sandberg bluegrass	118,151	35.8	46,757.1	55,679.5	15,714.5	2,609
Mountain Big Sage	Mountain big sagebrush, Idaho fescue, bluebunch wheatgrass	72,920	22.1	23,111	40,569.9	9,239.2	4,073
Basin Big Sage	Basin big sagebrush, thickspike wheatgrass, western wheatgrass	2,298	0.7	1,464.3	824.4	8.8	104
Low Sage	Low sagebrush, Idaho fescue, bluebunch wheatgrass, Sandberg bluegrass	2,081	0.6	1,187.7	699.3	194	104
Black Sage	Black sagebrush, bluebunch wheatgrass	12,312	3.7	3,724	7,405.2	1,183.2	417
Three Tip Sage	Threetip sagebrush, Idaho fescue, bluebunch wheatgrass	23,332	7.1	8,004.7	13,387.1	1,940.2	1,043
Mountain Mahogany	Mountain mahogany, bluebunch wheatgrass, Idaho fescue	4,085	1.2	933.6	2,825.3	326	104
Douglas Fir	Douglas fir, snowberry, pinegrass	22,492	6.8	-	-	-	-
Shadscale	Shadscale, needle-and-thread grass, Indian ricegrass, sand drop seed	32,909	10.0	8,991	19,206.2	4,711.3	1,148
Nuttall Saltbush	Nuttall saltbush, Indian ricegrass, bottlebrush squirreltail	1,934	0.6	1,837.1	97.3	-	31
Chicken Sage	Chicken sage, Hood's phlox, Sandberg bluegrass	11,857	3.6	7,020.2	4,495	341.7	208
Riparian Zones	Cottonwood, aspens, birch, alders, Kentucky bluegrass, slender wheatgrass.	519	0.1	414.5	23	81	73
Burn (1977)	No condition, class, or trend	189	0.1	-	-	-	-
Rock		24,619	7.5	-	-	-	-
Totals		330,122	100	103,567	145,439.6	33,815	10,436
Percent of Total				(36%)	(52%)	(12%)	

a/ No condition class ratings were made for Douglas fir, burn areas, or rock. Therefore, the total acreage will not equal totals for the ES area or the total acreage shown for trend.

b/ Trend data includes 3,116 acres of seedings that have returned to native conditions. No trend data is tabulated for burned area or rock. Therefore, total acreage figure will not equal totals for the ES area.

TABLE 2-2

Present Production by Vegetation Type and Condition Class
(Acres and AUMs on Public Lands)

Allotment	Douglas Fir ACRES	Basin Big Sagebrush (ARTRT) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S	Wyoming Big Sagebrush (ARTRW) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S
Red Lake	1708.6			27.5	1.4	69.9	0.0	997.6	16.6	1864.1	74.4	3211	7.9
Herd Creek	2740.4	8.3	2.1	7.1	1.0			2400.5	77.4	364.8	10.5	936.3	19.1
Road Creek	101.3			92	0.5	50.9		1209.7	7.9	5600.5	80.2	1887.9	1.0
Bruno Creek	1201.4							55	0.8	24.5	0.8	2.7	0.0
Round Valley	8.2	.5	0.0	56.9	3.0	138.2	0.0	3443.3	58.0	798.1	36.4	96.3	0.0
San Felipe	4314.5			123.9	14.6	591.3	0.2	911.2	36.0	5961.3	231.9	14395.6	78.0
Seedings						(16.8)						(2269.9)	
Warm Springs	627.8			517	33.9	355.8	1.2	2406.4	35.1	13897.6	358.9	5047.4	52.0
Garden Creek	1907							120.4	1.2	12367.7	189.5	5149.2	3.6
Bald Mountain	4639.7							65.6	0.2	2131.8	11.0	4725.9	3.6
Burn	(11)							(83.8)	0.5				
Thompson Creek	1440.1									387.5	1.5	157	0.1
Split Hoof										4170.9	57.2	2289.8	0.2
Squaw Creek	930.6							301	4.0	692.8	5.8	405.1	0.2
Spud Creek	840.8							186.3	1.8	2018.6	45.0	7586.7	0.0
Pine Creek	205.4									912.8	13.1	432.7	0.0
East Fork	926.2									2480.8	27.8	2024.9	5.0
Sullivan Creek	1329.7					1.9	0.1	3.8	0.0	128	2.6	87.7	0.5
Malm Gulch	70.2					239.5	7.8	3613.7	61.0	1877.7	66.0	1051	43.1
Totals Site/Condition Class	22491.9	8.8		824.4		1447.5		15716.5		55679.5		44487.2	
Seedings						16.8						2269.9	
Burn	11							83.8					
AUM's			2.1		54.4		9.3		300.5		1216.6		214.3

Allotment	Mountain Big Sagebrush (ARTRV) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S	Gray Low Sagebrush (ARARA) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S
Red Lake	284.6	37.5	2073.6	115.9	585	16.5						
Herd Creek	4897	210.4	5487.7	368.6	709.2	45.0	113.6	1.9	186.5	7.1		
Road Creek	467.4	2.1	2283.6	66.4	133.5	1.5	29.2		1.7			
Bruno Creek	439.2	16.6	511.8	33.5	73	4.0						
Round Valley	114	0.9										
San Felipe	1197.7	17.8	12848.7	555.6	8496.2	297.2	13.2	0.0	98.3	3.5	414.9	13.5
Seedings												
Warm Springs	328.3	25.1	4499.4	180.8	5807.5	223.6	32	3.2	94.9	3.1	456.7	11.2
Garden Creek	310.7	0.0	1582.9	63.0	978.2	5.5						
Bald Mountain	237.7	2.1	2617.8	30.5	1192.8	8.8						
Burn	(94.6)	0.1										
Thompson Creek	275.5	0.0	1731.3	13.4	591.1	0.9						
Split Hoof			279.6	9.8	13.9	0.0						
Squaw Creek	459.1	9.1	318.1	19.9	1876.1	45.9			26.1	1.4	312.5	4.5
Spud Creek	121.1	4.0	727.1	18.1								
Pine Creek			2271.6	82.6	120.3	0.0			237.5	4.9		
East Fork	54.8	0.0	2057.2	49.5	2096.2	18.5	6	0.0	54.3	0.9	3.6	0.1
Sullivan Creek			1255.2	78.5	397.3	7.5						
Malm Gulch	52.1	2.0	24.3	1.6	45.7	2.8						
Totals Site/Condition Class	9239.2		40569.9		23111		196		699.3		1187.7	
Seedings												
Burn	94.6											
AUM's		327.7		1687.7		677.7		5.1		20.9		29.3

Allotment	Black Sagebrush (ARARN) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S	Three-Tip Sagebrush (ARTR4) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S
Red Lake	252.9	7.6	2122.7	33.5	1294.3	18.9	170.2	8.1	857.3	52.6	767.7	29.9
Herd Creek							483.6	8.6	220.5	10.1	11.5	0.9
Road Creek							76.6	0.1	1034.9	23.6	155.6	0.2
Bruno Creek												
Round Valley							13.6	0.5				
San Felipe	365	11.2	3469.2	155.4	1247	11.1	562.4	36.2	3046.3	117.2	2879.2	69.1
Seedings					(9.6)						(2.4)	
Warm Springs	511.9	13.0	1497.2	9.0	695.6	3.2	551.7	14.4	2958.7	123.2	1554.4	34.5
Garden Creek			18.2	0.1			69	0.0	2336.3	59.6	1785.9	8.6
Bald Mountain			157.4	1.1					996.4	8.9	1257.8	9.8
Burn												
Thompson Creek												
Split Hoof			7.4	21.6					505.6	22.6	3.4	0.0
Squaw Creek												
Spud Creek									822.4	23.8	1.7	0.0
Pine Creek									481.5	14.9		
East Fork									121.4	0.6	65.2	0.8
Sullivan Creek												
Malm Gulch	53.4	0.0	133.1	4.9	477.5	1.8	13.1	0.6	5.8	0.1	24.9	0.0
Totals Site/Condition Class	1183.2		7405.2		3714.4		1940.2		13387.1		8002.3	
Seedings					9.6						2.4	
Burn												
AUM's		31.6		225.6		35.0		68.5		457.2		153.8

Allotment	Rock	Mountain Mahogany (CELE3) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S	Shadscale Saltbush (ATCO) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S
Red Lake	1831.5			138.2	1.5			480.6	12.4	1392.5	62.9	1502.6	0.0
Herd Creek	2743.4							268.2	1.9	266.7	0.0	472.7	0.5
Road Creek	1984.2							16.7	0.4	370.4	0.1	22	
Bruno Creek	70.4												
Round Valley	910.7							2436.3	25.1	3116.6	123.9	2346	0.0
San Felipe	2092.7	35.7	1.1	2109.2	21.8	692.8	4.0	3.5	0.0	1167.2	25.6	732.7	0.0
Seedings													
Warm Springs	1659.8	290.3	2.1	491.2	4.5	165.3	0.6	926.7	2.4	12182.4	519.9	1408.4	1.6
Garden Creek	2138							399.1	0.0	415.4	0.0	1500.5	0.9
Bald Mountain	3956.6			50.7	0.0							309.9	0.0
Thompson Creek	975.1												
Split Hoof	503.2									130.7	0.0	334.5	0.0
Squaw Creek	1670.6												
Spud Creek	1342.7											186.1	0.0
Pine Creek	358.6												
East Fork	1486.3									147.1	0.0	79.3	0.0
Sullivan Creek	341												
Malm Gulch	621.9			36	0.5	75.3	0.2	378.2		17.2	0.0	94.3	0.1
Total Site/Condition Class	24686.7	326		2825.3		933.6		4711.3		19206.2		8991	
Seedings													
AUM'S			3.2		28.3		4.8		42.2		732.4		3.1

Allotment	Nuttall Saltbush (ATNU) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S	Nuttall Tansy (Half Shrub) Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S
Red Lake			21:5	0.8	101	0.0			720	12.6	720.1	0.9
Herd Creek							45.1	1.2	39.6	2.2	8.4	0.2
Road Creek												
Bruno Creek												
Round Valley			6.2	0.2	14.1	0.0						
San Felipe			12.1	0.5	623.9	0.2	281	10.1	3347	103.5	5985	12.8
Seedings					(817.6)							
Warm Springs			57.5	2.4	271.4	0.0	15.6	0.2	289.7	4.4	76.9	0.5
Garden Creek									6.1	0.1		
Bald Mountain					8.3	0.0						
Thompson Creek												
Split Hoof									59	1.8	24.3	0.0
Squaw Creek												
Spud Creek												
Pine Creek											5.6	0.0
East Fork					.8	0.0						
Sullivan Creek											1.3	0.0
Malm Gulch									33.6	0.8	196.2	0.2
Total Site/Condition Class			97.3		1019.5		341.7		4495		7020.2	
Seedings					817.6							
AUM'S				3.9		0.2		11.5		125.4		14.6

Allotment	Semi-Wet Meadow Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S	Semi-Wet Stream Bottom Good ACRES	Good AUM'S	Fair ACRES	Fair AUM'S	Poor ACRES	Poor AUM'S
Red Lake												
Herd Creek	74.8	83.9	64.1	60.8								
Road Creek			47.3	39.5								
Bruno Creek												
Round Valley												
San Felipe			88.5	94.5	92.7	6.9						
Seedings												
Warm Springs			27.5	23.4								
Garden Creek											73.8	4.4
Bald Mountain							23.7	5.2	25	5.4	17.5	1.1
Thompson Creek											37.2	2.8
Split Hoof											92.3	4.8
Squaw Creek							57.3	18.1				
Spud Creek											22.5	1.4
Pine Creek												
East Fork											113.9	7.2
Sullivan Creek					29.1	1.8						
Malm Gulch												
Total Site/Condition Class	74.8		227.4		121.8		81.0		23		357.2	
Seedings												
AUM'S		83.9		218.2		8.7		23.3		5.4		21.7

TABLE 2-3

PRESENT AND POTENTIAL AUM PRODUCTION FOR
SPRING USE AND SUMMER USE TABULATED BY ALLOTMENT (AUMs) 1/

Allotment	Present Total AUMs		Potential Total AUMs 2/	
	Spring	Summer	Spring	Summer
Red Lake	1,977	1,994	2,454	3,095
Herd Creek	2,565	3,520	2,678	4,003
Road Creek	1,512	1,803	1,600	2,227
Bruno Creek	250	373	246	421
Round Valley	873	828	1,001	1,136
San Felipe	8,035	9,132	10,118	14,214
Warm Springs	5,464	5,737	6,821	8,978
Garden Creek	2,717	2,987	3,040	4,200
Bald Mountain	1,760	2,075	2,007	2,987
Thompson Creek	521	692	591	940
Split Hoof	720	786	796	1,078
Squaw Creek	509	647	743	1,211
Spud Creek	696	803	773	1,075
Pine Creek	609	758	658	955
East Fork	1,086	1,279	1,330	2,071
Sullivan Creek	328	432	366	565
Malm Gulch	675	771	769	991
Total	30,297	34,617	35,991	50,147

1/ .All figures are based on proper use of the forage plants and were computed by individual vegetation types within each allotment. Detailed data is available at Salmon BLM District.

2/ Potentials are based on forage production for each vegetative type at a "Good" condition class.

TABLE 2-4

PRESENT VEGETATIVE CONDITION BY ALLOTMENT
(Public Acres)

Allotment	Good	Fair	Poor	Douglas Fir, Burned Areas, and Rock	Total
Red Lake	2,186	9,217	8,251	3,541	23,195
Herd Creek	8,292	6,637	2,138	4,983	22,050
Road Creek	1,800	9,430	2,250	2,085	15,565
Bruno Creek	494	537	76	1,271	2,378
Round Valley	6,010	3,978	2,596	919	13,503
San Felipe	3,370	32,272	39,267	6,407	81,316
Warm Springs	5,063	36,513	15,839	2,288	59,703
Garden Creek	699	16,726	8,988	4,045	30,458
Bald Mountain	327	5,977	7,507	8,726	22,597
Thompson Creek	276	2,119	785	2,415	5,595
Split Hoof	-	5,153	2,759	503	8,415
Squaw Creek	760	1,036	2,651	2,597	7,044
Spud Creek	307	3,568	2,797	2,184	8,856
Pine Creek	-	3,903	559	564	5,026
East Fork	61	4,861	4,384	2,409	11,715
Sullivan Creek	4	1,383	512	1,671	3,570
Malm Gulch	4,166	2,130	2,208	692	9,136
Totals	33,815	145,440	103,567	47,300	330,122

TABLE 2-5

APPARENT TREND BY ALLOTMENT (FEDERAL)
(Public Acres)

Allotment	Up	Down	Static	Doug Fir Burn & Rock	Total
Red Lake	0	3,630	16,024	3,541	23,195
Herd Creek	0	570	16,497	4,983	22,050
Road Creek	0	4,789	8,691	2,085	15,565
Bruno Creek	0	0	1,107	1,271	2,378
Round Valley	0	0	12,614	919	13,503
San Felipe	3,960	24,500	46,449	6,407	81,316
Warm Springs	0	23,450	33,965	2,288	59,703
Garden Creek	0	6,970	19,443	4,045	30,458
Bald Mountain	3,670	2,630	7,511	8,726	22,597
Thompson Creek	2,020	520	640	2,415	5,595
Split Hoof	0	2,600	5,312	503	8,415
Squaw Creek	0	650	3,797	2,597	7,044
Spud Creek	620	0	6,052	2,184	8,856
Pine Creek	0	0	4,462	564	5,026
East Fork	2,520	0	6,786	2,404	11,715
Sullivan Creek	0	1,648	250	1,672	3,570
Malm Gulch	0	1,020	7,425	691	9,136
Totals	12,790	72,977	197,055	47,300	330,122

TABLE 2-6

CURRENT AUMs AVAILABLE FOR LIVESTOCK GRAZING

Allotment	Current AUMs Available for Livestock
Red Lake	613
Herd Creek	1,411
Road Creek	346
Bruno Creek	85
Round Valley	438
San Felipe	3,484
Warm Springs	2,201
Garden Creek	600
Bald Mountain	296
Thompson Creek	51
Split Hoof	118
Squaw Creek	133
Spud Creek	202
Pine Creek	181
East Fork	192
Sullivan Creek	85
Malm Gulch	0
Total	10,436

TABLE 2-7

APPARENT TREND BY VEGETATION TYPE AND ALLOTMENT 1/

Allotment	Vegetation Type	Up	Down	Static	Total	Remarks
Red Lake	ARTRW		1,565	4,508	6,073	
	ATCO		1,985	1,391	3,376	
	ARARN		80	3,590	3,670	
	PSME			1,709	1,709	
	ARTRT			97	97	
	ARTRV			2,943	2,943	
	ARTR4			1,795	1,795	
	TANU			1,440	1,440	
	CELE4			138	138	
	ATNU			122	122	
	Rock				1,832	
Total		0	3,630	17,733	23,195	
Herd Creek	ARTRV		570	10,524	11,094	
	ARTRT			15	15	
	ARTRW			3,702	3,702	
	ARARA			300	300	
	ARTR4			716	716	
	ATCO			1,008	1,008	
	TANU			93	93	
	Wet Meadow			139	139	
	PSME			2,240	2,240	
	Rock				2,743	
Total		0	570	18,737	22,050	
Road Creek	ARTRT		130	13	143	
	ARTRW		4,250	4,448	8,698	
	ATCO		409		409	
	ARTRV			2,885	2,885	
	ARARA			31	31	
	ARTR4			1,267	1,267	
	Wet Meadow			47	47	
	PSME			101	101	
	Rock				1,984	
Total		0	4,789	8,792	15,565	
Bruno Creek	PSME	50		1,151	1,201	
	ARTRW			82	82	
	ARTRV			1,025	1,025	
	Rock				70	
Total		50	0	2,258	2,378	
Round Valley	ARTRT			196	196	
	ARTRW			4,338	4,338	
	ARTRV			114	114	
	ARTR4			14	14	
	ATCO			7,903	7,903	
	ATNU			20	20	
	PSME			8	8	
	Rock				910	
Total		0	0	12,593	13,503	

TABLE 2-7

APPARENT TREND BY VEGETATIVE TYPE AND ALLOTMENT

Allotment	Vegetative Type	Up	Down	Static	Total	Remarks
San Felipe	ARARN	1,670		3,420	5,090	Includes 10 ac. of a seeding.
	ARTR4	1,250	2,010	3,230	6,490	Includes 2 ac. of a seeding.
	ARTRV	520	2,840	19,184	22,544	
	CELE4	340		2,498	2,838	
	PSME	780	500	3,035	4,315	
	ARTRW	140	12,230	11,167	23,537	Includes 2,270 ac. of a seeding.
	Wet Meadow	40		141	181	
	TANU		5,550	4,063	9,613	
	ATCO		1,450	453	1,903	
	ARTRT		420	312	732	Includes 17 ac. of a seeding.
	ARARA			526	526	
	ATNU			1,454	1,454	Includes 818 ac. of a seeding.
	Rock				2,093	
Total		4,740	25,000	49,483	81,316	
Warm Springs	ARTRW		11,000	10,350	21,350	
	ARTRT		260	613	873	
	CELE4		530	417	947	
	ARTRV		1,810	8,824	10,634	
	ARTR4		670	4,395	5,065	
	ATNU		300	29	329	
	ATCO		7,390	7,128	14,518	
	ARARN		1,490	1,215	2,705	
	ARARA			584	584	
	TANU			382	382	
	Wet Meadow			28	28	
	PSME			628	628	
	Rock				1,660	
Total		0	23,450	34,593	59,703	
Garden Creek	ARTRW		5,710	11,927	17,637	
	ARTRV		930	1,942	2,872	
	ARTR4		330	3,361	3,691	
	ARARN			18	18	
	ATCO			2,115	2,115	
	TANU			6	6	
	Riparian Zones			74	74	
	PSME			1,907	1,907	
	Rock				2,138	
Total		0	6,970	21,350	30,458	
Bald Mountain	ARTRW	2,880	2,040	2,003	6,923	
	ARTRV	790	190	3,069	4,049	
	ARTR4		400	1,849	2,249	
	PSME	2,610		2,030	4,640	
	ARARN			157	157	
	CELE4			51	51	
	ATCO			310	310	
	ATNU			8	8	
	Semi-wet Stream Bottom			64	64	
	Rock				3,957	
	Burn				189	
Total		6,280	2,630	9,541	22,597	

TABLE 2-7

APPARENT TREND BY VEGETATIVE TYPE AND ALLOTMENT

Allotment	Vegetative Type	Up	Down	Static	Total	Remarks
Thompson Creek	ARTRW	210	165	170	545	
	ARTRV	1,800	355	443	2,598	
	PSME	630		810	1,440	
	Semi-wet Stream Bottom	10		27	37	
	Rock				975	
Total		2,650	520	1,450	5,595	
Split Hoof	ARTRW		2,600	3,861	6,461	
	ARTRV			294	294	
	ARARN			7	7	
	ARTR4			509	509	
	ATCO			465	465	
	TANU			84	84	
	Semi-wet Stream Bottom			92	92	
	Rock				503	
Total		0	2,600	5,312	8,415	
Squaw Creek	ARTRW		650	749	1,399	
	ARTRV			2,652	2,652	
	ARARA			339	339	
	Semi-wet Stream Bottom			57	57	
	PSME			931	931	
	Rock				1,671	
Total		0	650	4,728	7,044	
Spud Creek	ARTRW	620		4,171	4,791	
	PSME	470		371	841	
	ARTRV			848	848	
	ARTR4			824	824	
	ATCO			186	186	
	Semi-wet Stream Bottom			23	23	
	Rock				1,343	
Total		1,090	0	6,423	8,856	
Pine Creek	ARTRW			1,345	1,345	
	ARTRV			2,391	2,391	
	ARARA			238	238	
	ARTR4			482	482	
	TANU			6	6	
	PSME			205	205	
	Rock				359	
Total		0	0	4,667	5,026	
East Fork	ARTRW	1,110		3,396	4,506	
	ARTRV	1,410		2,798	4,208	
	PSME	250		676	926	
	ARARA			64	64	
	ARTR4			187	187	
	ATCO			226	226	
	ATNU			1	1	
	Semi-wet Stream Bottom			114	114	
	Rock				1,486	
Total		2,770	0	7,462	11,715	

TABLE 2-7 (Continued)

APPARENT TREND BY VEGETATION TYPE AND ALLOTMENT

Allotment	Vegetation Type	Up	Down	Static	Total	Remarks
Sullivan Creek	ARTRV		1,648		1,648	
	PSME		170	1,161	1,331	
	ARTRW			220	220	
	TANU			1	1	
	Semi-wet Meadow			29	29	
	Rock				341	
Total		0	1,818	1,411	3,570	
Malm Gulch	ARARN		650	14	664	
	ARTRW		270	6,271	6,541	
	CELE4		100	12	112	
	ARTRT			240	240	
	ARTR4			44	44	
	ARTRV			122	122	
	ATCO			490	490	
	TANU			232	232	
	PSME			70	70	
	Rock				621	
Total		0	1,020	7,495	9,136	

TABLE 2-8

NAMES AND SYMBOLS FOR MOST COMMON OCCURRING VEGETATION SPECIES

Species Name	Abbreviation	Common Name
Grasses		
Agropyron trachycaulum	AGTR	Slender wheatgrass
Agropyron spicatum	AGSP	Bluebunch wheatgrass
Agropyron dasystacium	AGDA	Thickspike wheatgrass
Agropyron cristatum	AGCR	Crested wheatgrass
Agropyron smithii	AGSM	Western wheatgrass
Poa pratensis	POPR	Kentucky bluegrass
Poa Secunda	POSE	Sandberg bluegrass
Festuca idahoensis	FEID	Idaho fescue
Calamagrostis rubescens	CARU	Pinegrass
Stipa comata	STCO	Needle and threadgrass
Sporobolus cryptandrus	SPCR	Sand dropseed
Oryzopsis hymenoides	ORHY	Indian rice grass
Sitanion hystrix	SIHY	Bottlebrush squirreltail
Carex (several species present)	--	Sedge
Shrubs		
Artemesia tridentata wyomingensis	ARTRW	Wyoming big sagebrush
Artemesia tridentata vaseyana	ARTRV	Mountain big sagebrush
Artemesia tridentata tridentata	ARTRT	Basin big sagebrush
Artemesia arbuscuia	ARAR8	Low sagebrush
Artemesia arbuscula nova	ARARN	Black sagebrush
Artemesia tripartita	ARTR4	Threetip sagebrush
Atriplex confertifolia	ATCO	Shadscale
Atriplex nuttallii	ATNU	Nuttall saltbrush
Tanacetum nuttallii	TANU	Chicken sage
Rose (several species present)	--	Rose
Ribes (several species present)	--	Currant
Trees		
Cercocarpus ledifolius	CELE3	Mountain mahogany
Pseudotsuga menziesii	PSME	Rocky mountain douglas fir
Populus Spp.	--	Cottonwood
Betula Spp.	--	Birch
Alnus Spp.	--	Alder

Threatened and Endangered Plants

The complex geologic history of east-central Idaho has contributed to an equally complex floral community. Several species are native (endemic) to the area and are not found elsewhere. Other species common in other areas have isolated populations thriving in the Challis area (disjunct). T&E species are of particular concern because they could not be reestablished if eliminated.

Public Law 93205, the Endangered Species Act of 1973, provides for protection of T&E plants. Criteria set forth in P.L. 93205 describe an endangered species as one considered to be in danger of extinction throughout all or a significant portion of its range. Threatened species are considered those which may become endangered in the forseeable future. Lists of such plants were published in the Federal Register on July 1, 1975, and again on June 16, 1976. In addition several Idaho botanists have compiled lists of plants they consider as being, if not endangered, at least rare or uncommon.

Table 2-9 is a composite of the various species that were given special attention during the 1976 vegetation/soils inventory completed by BLM personnel and includes species from both federal and local lists.

Many species were not identified during the field inventory but this in no way indicates that they were not present in the unit. Those that were identified appear to be somewhat more widespread within the unit than previously estimated.

TABLE 2-9

SENSITIVE SPECIES WITHIN THE CHALLIS ES AREA

Common Name	Scientific Name	Federal Standing	State Standing	Endemic or Disjunct	Known General Location
Idaho thelopody	Thelopodium repandum	E	E	E	Bayhorse Creek, Herd Creek, Wood Creek, Spur Canyon, Road Creek, Hole-in-Rock, Bear Wallow, Malm Gulch
Salmon River crazyweed	Oxytropis besseyi salmonensis	-	E	E	Malm Gulch, Red Lake
Custer milkvetch	Astragalus amnsi-amissi	E	E	E	Not located
Lost River silene	Silene scaposa lobate	T	T	D	Not located
Idaho bladderpod	Lesquerella carinata	T	Remove from threatened list	D	Not located
Everman duskymaiden	Chaenactis evermannii	T	Remove from threatened list	D	Not located
Idaho hymenopappus	Hymenopappus filifolius idahoensis	T	T	E	Not located
Swallen ricegrass	Oryzopsis swallenii	-	T	E	Antelope Flat, Little Lost Birch Creek
Salmon River cryptantha	Cryptantha aalmonensis	_	T	E	Not located
Salmon milkvetch	Astragalus vexcilliflexus rubilus	T	T	E	Not located
Salmon River rabbit-brush	Chrysothamnus parryi	-	-	D	Not located
Salmon wildrye	Elymus ambiguus salmonis	-	-	E	Round Valley, Garden Creek, Red Lake, Malm Gulch - Rather widespread

Note: Columns 3 and 4: E - endangered, T -threatened

Sources: Plant Names: Idaho Plant List, UDSA, Soil Conservation Service, April 5, 1976
Federal Standings: Endangered and Threatened Plants of Idaho, Henderson, D.M., F.D. Johnson, P. Packard and R. Steele; University of Idaho Press, June 1977.
State Standings: Research Natural Area Needs in Idaho, Wellner, C.A., and F.D. Johnson, University of Idaho, December, 1974.

SOILS

Description

The soils in the Challis Unit are quite varied due to the complex geology and rather wide range in climate and elevation. They often occur in an intricate pattern on the landscape and are mapped as soil complexes, associations and occasionally, as consociations.

A third order soil survey was conducted during 1977 by Soil Conservation Service (SCS) and Bureau of Land Management (BLM) personnel to determine the distribution and kinds of potential vegetation and soils in the Challis area. The survey was conducted in accordance with the policies and procedures in the SCS National Soils Handbook and related SCS soils memoranda. The soils were mapped on color aerial photos at a scale of 1:15,840. From this survey a General Soil Map (Map 2-5) was designed to show the distribution of the major soil groups in the Challis Unit. Each of the major soil groups or map units has its own distinctive pattern of soils and landscape features. Normally each map unit consists of one or more soils of major extent and inclusions of soils of minor extent. The extent of each map unit is shown in Table 2-10.

Based on interpretations of SCS and BLM soil scientists, a summary of soil properties for the dominant soils is given in Table 2-11. Potential production for the major soils is shown on Table 2-12 in the vegetation section. This information was developed by range conservationists during the 1977 inventory mentioned above.

Sediment Yield

Sediment yields were estimated using the Pacific Southwest Interagency Committee (PSIAC) method outlined in BLM Manual 7317, Appendix 2, as modified by BLM's Denver Service Center. These estimates are detailed in Tables 2-13 and 2-14.

The highest per acre sediment yield is from the burned area, where ground cover is sparse. Total volume, however, is greatest from the Wyoming big sagebrush and mountain big sagebrush types, which together produce almost 70 percent of the total sediment.

Table 2-15 shows approximate sediment yield that would occur with no disturbance, and maximum possible plant and litter cover. The excess, or accelerated erosion above these levels, is the result of reduced ground cover and surface disturbance by grazing animals and other agents.

TABLE 2-10

SOIL MAP UNITS AND ACRES WITHIN
THE CHALLIS ES AREA
(ALL OWNERSHIP)

Soil Map Unit	Acres	Percent of Total
1. Challis	17,440	4.9
2. Challis-Allhands-Instalay	31,796	9.0
3. Levzig-Venum	51,694	14.7
4. Flagton-Gradco	40,373	11.5
5. Katz-Hoskin	11,882	3.4
6. Pecture-Sink	11,204	3.2
7. Reck-Sleep-Stupile-Jonda	20,870	5.9
8. Zeebar-Jonda-Brabas	18,515	5.3
9. Zeale-Nitchly-Meeger-Konian	44,302	12.6
10. Vaysa-Sleep-Stupile	51,036	14.5
11. Lopine-Vaysa	21,503	6.1
12. Lopine-Rubbleland-Zeebar	12,580	3.6
13. Lopine-Cryoborolls-Hamtah	18,687	5.3
Total Acres	352,182	100.0%

TABLE 2-11

SUMMARY OF SOIL CHARACTERISTICS

Name	Classification	Position on Landscape and Slope Range (%)	Parent Materials	Texture		Depth (inches)	Water Holding Capacity	Permeability	Surface Runoff	Erosion Susceptibility
				Surface	Subsoil					
Challis	Durixerollic Calciorthid, loamy-skeletal, mixed, frigid	alluvial fans & colluvial slopes 0 - 50	mixed alluvium & igneous & sedimentary colluvium	loam, gravelly loam, & very gravelly loam	very gravelly sandy loam, & very gravelly loam	60+	low	moderate to moderately rapid	slow to rapid	moderate
Allhands	Haploxerollic Durorthid, loamy-skeletal, mixed, frigid, shallow	alluvial fans 0 - 20	mixed alluvium mainly from limestone and dolomite	very gravelly loam	very gravelly loam	10 - 20	very low	moderate	slow to medium	high
Instalay	Haploxerollic Durorthid, loamy-skeletal, mixed, frigid	alluvial fans & colluvial slopes 0 - 30	mixed alluvium & colluvium, mainly from limestone & dolomite	gravelly loam	very gravelly loam & very gravelly sandy loam	20 - 40	very low	moderate to moderately rapid	slow to medium	moderate
Levzig	Durixerollic Haplargid, loamy-skeletal, mixed frigid	hills, colluvial slopes & alluvial fans 0 - 50	lava, ranging in composition from rhyolite to basalt, tuff and welded tuff	gravelly loam	very gravelly loam and very gravelly clay loam	60	low	moderate to moderately slow	slow to rapid	high
Venum	Durixerollic Haplargid, clayey-skeletal, montmorillonitic, frigid	hills, colluvial slopes & alluvial fans 0 - 50	lava, ranging in composition from andesite to basalt, quartzite, conglomerate, and tuff	loam & clay loam to very gravelly loam & very gravelly clay loam	very gravelly clay loam & very gravelly clay	60	low	slow	medium to rapid	high
Flagton	Xerollic Calciorthid, loamy-skeletal, mixed, frigid, shallow	low hills 20 - 50	tuff, welded tuff, sandstone, & siltstone	gravelly loam	very flaggy loam	10 - 20	very low	moderate	medium to rapid	high
Gradco	Xerollic Camborthid loamy-skeletal, mixed, frigid	low hills 5 - 50	tuff, welded tuff, sandstone, & siltstone	gravelly loam & very gravelly loam	very flaggy loam	20 - 40	low	moderate	medium to rapid	high

TABLE 2-11

SUMMARY OF SOIL CHARACTERISTICS

Name	Classification	Position on Landscape and Slope Range (%)	Parent Materials	Texture		Depth (inches)	Water Holding Capacity	Permeability	Surface Runoff	Erosion Susceptibility
				Surface	Subsoil					
Katz	Lithic Xerochrept, loamy, mixed, frigid	foothills 20 - 60	lava ranging in composition from rhyolite to andesite	gravelly loam & very gravelly loam	gravelly loam & gravelly coarse sandy loam	10 - 20	very low	moderate to moderately rapid	medium to rapid	high
Hoskin	Typic Argixeroll, loamy-skeletal, mixed, frigid	foothills 20 -60	lava ranging in composion from rhyolite to andesite	gravelly loam	very gravelly loam	20 - 40	low	moderate	medium to rapid	moderate
Pecture	Typic Xerochrept, loamy-skeletal, mixed, frigid	foothills 20 - 60	slate & lava ranging in composition from rhyolite to andesite	very slaty loam	very slaty loam	60	low	moderate	medium to rapid	high
Sink	Typic Argixeroll, loamy-skeletal, mixed, frigid	foothills 2 - 60	slate & lava ranging in composition from rhyolite to andesite	slaty loam & very slaty loam	very slaty loam	60	low	moderate	medium to rapid	moderate
Reck	Mollic Cryoboralf, clayey-skeletal, montmorilloritic	foothills & mountains 2 - 60	lava, ranging in composition from rhyolite to basalt, conglomerate, tuff & welded tuff	gravelly & very gravelly loam to clay loam	very gravelly clay loam & very gravelly clay	60	medium	slow	medium to very rapid	high
Sleep	Argic Cryoboroll, clayey-skeletal, montmorillonitic	foothills & mountains 2 - 60	lava, ranging in composition from rhyolite to basalt, conglomerate, tuff & welded tuff	gravelly loam	very gravelly clay loam & very gravelly clay	60	medium	slow	medium to rapid	moderate
Stupile	Argic Cryoboroll, loamy-skeletal, mixed	foothills & mountains 2 - 60	lava, ranging in composition from rhyolite to basalt	very gravelly loam	very gravelly loam & very gravelly clay loam	20 - 40	low	moderate to moderately slow	slow to rapid	moderate

TABLE 2-11

SUMMARY OF SOIL CHARACTERISTICS

Name	Classification	Position on Landscape and Slope Range (%)	Parent Materials	Texture		Depth (inches)	Water Holding Capacity	Permeability	Surface Runoff	Erosion Susceptibility
				Surface	Subsoil					
Jonda	Mollic Cryoboralf, loamy-skeletal, mixed	foothills & mountains 2 - 60	lava ranging in composition from rhyolite to basalt, tuff & welded tuff	gravelly loam	very gravelly loam & very gravelly clay loam	60	medium	moderate to moderately slow	slow to rapid	high
Zeebar	Argic Cryoboroll, loamy-skeletal, mixed	foothills & mountains 5 - 60	lava, ranging in composition from rhyolite to basalt, tuff, welded tuff, sandstone & siltstone	gravelly loam & very gravelly loam	very gravelly loam & very gravelly clay loam	60	medium	moderate to moderately slow	slow to rapid	moderate
Brabas	Mollic Cryoboralf, fine, montmorillonitic	foothills 0 - 50	tuff, welded tuff, siltstone, & dolomite	loam	clay loam & clay	60	high	slow	slow to rapid	high
Unnamed	Typic Cryochrept, loamy or clayey-skeletal, mixed	foothills, mountain tops, & ridges 2 - 20	lava, ranging in composition from rhyolite to basalt, limestone & dolomite	very gravelly & very cobbly loam to clay loam	very gravelly & very cobbly loam to clay loam	20 - 60	very low	moderate to slow	slow to medium	moderate to high
Zeale	Calcic Cryoboroll, loamy-skeletal, mixed	foothills & mountains 5 - 60	limestone & dolomite	gravelly loam & very gravelly loam	very gravelly loam & very gravelly sandy loam	60	low	moderate to moderately rapid	slow to rapid	moderate
Nitchly	Typic Cryochrept, loamy-skeletal, carbonatic	foothills & mountains 5 - 60	limestone & dolomite	very gravelly loam	very gravelly loam	60	low	moderate	slow to rapid	moderate
Meeger	Calcic Pachic Cryoboroll, loamy-skeletal, mixed	foothills & mountains 5 - 60	limestone & dolomite	gravelly loam	very gravelly loam	60	high	moderate	slow to rapid	slight

TABLE 2-11

SUMMARY OF SOIL CHARACTERISTICS

Name	Classification	Position on Landscape and Slope Range (%)	Parent Materials	Texture		Depth (inches)	Water Holding Capacity	Permeability	Surface Runoff	Erosion Susceptibility
				Surface	Subsoil					
Konian	Calcic Pachic Cryoboroll, loamy-skeletal, mixed	foothill & mountain slopes 20 - 60	limestone & dolomite	loam & gravelly loam	very gravelly loam & very gravelly sandy loam	60	medium	moderate to moderately rapid	slow to rapid	slight
Vaysa	Argic Pachic Cryoboroll, loamy-skeletal mixed	foothills & mountains 5 - 60	lava, ranging in composition from rhyolite to basalt, argillite, & shale	gravelly loam & very gravelly loam	very gravelly loam & very gravelly clay loam	60	medium	moderate to moderately slow	slow to rapid	slight
Lopine	Typic Cryochrept, loamy-skeletal, mixed	foothill & mountain slopes 20 - 60	lava, ranging in composition from rhyolite to basalt, argillite, shale, slate, & quartzite	gravelly loam	very gravelly loam & very gravelly sandy loam	60	low	moderate to moderately rapid	slow to rapid	slight
Hamtah	Argic Pachic Cryoboroll, clayey-skeletal, montmorillonitic	foothills & mountains 2 - 50	andesite,basalt, tuff, quartzite & breccia	loam & gravelly loam	very gravelly clay loam & very gravelly clay	60	high	slow	slow to rapid	moderate

TABLE 2-12

VEGETATION SOIL RELATIONSHIPS

Vegetation Type	Soils		Potential production (lb/ac air dry) 1/		
	Series and Phase	Classification	Favorable Years 2/	Median Years 2/	Unfavorable Years 2/
Shadscale	Flagton saline	Xerollic Calciorthid, loamy- skeletal, mixed, frigid, shallow	350	200	75
	Challis	Durixerollic Calciorthid, loamy - skeletal, mixed, frigid	600	350	200
Nuttall saltbush	Challis saline	Durixerollic Calciorthid, loamy-skeletal, mixed, frigid	650	400	300
Half-shrub	Allhanda dry	Haploxerollic Durorthid, loamy - skeletal, mixed, frigid, shallow	300	150	75
Wyoming big sagebrush	Flagton dry	Xerollic Calciorthid, loamy- skeletal, mixed, frigid, shallow	500	300	175
	Gradco dry	Xerollic Camborthid, loamy-skeletal, mixed, frigid			
Basin big sagebrush	Challis wet	Durixerollic Calciorthid, loamy - skeletal, mixed, frigid	1,200	700	400
Wyoming big sagebrush	Challis moist	Durixerollic Calciorthid, loamy - skeletal, mixed, frigid	600	300	175
	Venum	Durixerollic Haplargid, clayey - skeletal, montmorillonitic, frigid			
	Levzig	Durixerollic Haplargid, loamy - skeletal, mixed frigid			
	Jonda	Mollic Cryoboralf, loamy - skeletal, mixed	800	450	300
	Rack dry	Mollic Cryoboralf, clayey-skeletal, montmorillonitic			
	Pecture	Typic Xerochrept, loamy - skeletal, mixed, frigid			
	Katz	Lithic Xerochrept, loamy, mixed, frigid			
	Brabas	Mollic Cryoboralf, fine, montmorillonitic			
Black sagebrush	Nitchly	Typic Cryochrept, loamy - skeletal, carbonatic	700	400	300
	Instalay	Haploxerollic Durorthid, loamy - skeletal, mixed, frigid			
Half-shrub	Unnamed	Typic Cryochrept, loamy - skeletal, mixed	450	300	100
Basin big sagebrush	Unnamed	Xeric Torrifluvent	1,000	600	400
Mountain mahogany	Konian dry	Calcic Pachic Cryoboroll, loamy - skeletal, mixed	500	300	150
Low sagebrush	Rack moist	Mollic Cryoboralf, clayey - skeletal, montmorillonitic	700	400	250
Three-tip sagebrush	Zeebar dry	Argic Cryoboroll, loamy - skeletal, mixed	900	500	300
	Zeale moist	Calcic Cryoboroll, loamy - skeletal, mixed			
	Sink	Typic Argixeroll, loamy - skeletal, mixed, frigid			
	Hoskin	Typic Argixeroll, loamy-skeletal, mixed, frigid			
Mountian big sagebrush	Sleep	Argic Cryoboroll, clayey - skeletal, montmorillonitic	1,000	600	350
	Stupile	Argic Cryoboroll, loamy - skeletal, mixed			
	Vaysa	Argic Pachic Cryoboroll, loamy - skeletal, mixed			
Mountain mahogany	Konian	Calcic Pachic Cryoboroll, loamy-skeletal, mixed	600	400	200
Mountain big sagebrush	Vaysa moist	Argic Pachic Cryoboroll, loamy-skeletal, mixed	1,500	800	500
	Hamtah	Argic Pachic Cryoboroll, clayey-skeletal, montmorilonitic			
	Meeger	Calcic Pachic Cryoboroll, loamy-skeletal, mixed			
Douglas Fir	Lopine	Typic Cryochrept, loamy-skeletal, mixed			
	Konian moist	Calcic Pachic Cryoboroll, loamy-skeletal, mixed			
Semi-wet meadow	Unnamed	Aquic Cryoboroll	3,000	2,000	1,400
Semi-wet stream bottom	Unnamed	Typic Cryoboroll	1,200	800	500

1/ More information about production may be obtained from ecological site descriptions at the Salmon District office of the BLM.

2/ Favorable, median, and unfavorable years of production indicate the average production in years of above average, average, and below average precipitation, respectively.

TABLE 2-13

ESTIMATED ANNUAL SEDIMENT YIELD BY ALLOTMENT

Allotment	Acres	Total Sediment (Tons)	Average Tons/Acre
Red Lake	23,195	24,427	1.05
Herd Creek	22,050	31,576	1.43
Road Creek	15,565	22,477	1.44
Bruno Creek	2,378	2,404	1.01
Round Valley	13,503	18,005	1.33
San Felipe	81,316	110,549	1.36
Warm Springs	59,703	89,703	1.50
Garden Creek	30,458	40,325	1.32
Bald Mountain	22,597	22,046	0.98
Thompson Creek	5,595	6,850	1.22
Split Hoof	8,415	11,538	1.37
Squaw Creek	7,044	6,133	0.87
Spud Creek	8,856	10,439	1.18
Pine Creek	5,026	7,043	1.40
East Fork	11,715	18,619	1.59
Sullivan Creek	3,570	3,287	0.92
Malm Gulch	9,136	11,207	1.23
Total	330,122	436,628	1.32

TABLE 2-14

ESTIMATED ANNUAL SEDIMENT YIELD BY ALLOTMENT AND VEGETATION TYPE

	Basin Big Sagebrush (ARTRT)			Wyoming Big Sagebrush (ARTRW)			Mountain Big Sagebrush (ARTRV)			Gray Low Sagebrush (ARARA)		
Allotment	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total
Red Lake	1.22	97	118	1.33	6,073	8,077	1.16	2,943	3,414			
Herd Creek	.97	15	15	1.83	3,702	6,775	1.68	11,094	18,638	1.62	300	486
Road Creek	1.16	143	166	1.74	8,698	15,135	1.45	2,885	4,183	1.39	31	43
Bruno Creek				1.89	82	155	1.28	1,025	1,312			
Round Valley	.93	196	182	1.54	4,337	6,679	.97	114	111			
San Felipe	1.51	732	1,105	1.45	739	1,072	1.28	35	45			
" "				1.68	22,798	38,301	1.54	22,509	34,664	1.54	526	810
Warm Springs	1.04	873	908	1.60	8,173	13,077	1.54	360	554	1.51	180	272
" "				1.74	6,259	10,891	1.68	440	739	1.60	404	646
" "				1.97	5,413	10,664	1.83	4,834	8,846			
" "				2.12	1,505	3,191	1.45	5,000	7,250			
Garden Creek				1.54	17,637	27,161	1.09	2,872	3,130			
Bald Mountain				1.74	6,923	12,046	.52	4,049	2,105			
Thompson Creek				2.03	545	1,106	1.74	2,598	4,521			
Split Hoof				1.45	6,461	9,368	1.16	294	341			
Squaw Creek				1.10	1,399	1,539	1.33	2,652	3,527	1.45	339	492
Spud Creek				1.74	4,791	8,336	.93	848	789			
Pine Creek				2.03	1,345	2,730	1.28	2,391	3,061	1.51	238	359
East Fork				2.47	4,506	11,130	1.39	2,995	4,163	1.51	64	97
" "							1.33	1,213	1,613			
Sullivan Creek				1.62	220	356	1.33	1,648	2,192			
Malm Gulch	1.10	240	264	1.45	10	15	1.54	122	188			
" "				1.33	6,531	8,686						
Total		2,296	2,758		118,147	196,490		72,921	105,386		2,082	3,205
Average, Tons/Acre	1.20			1.66			1.45			1.54		

TABLE 2-14

ESTIMATED ANNUAL SEDIMENT YIELD BY ALLOTMENT AND VEGETATION TYPE (cont.)

Allotment	Nuttall Saltbush (ATNU)			Nuttall Tansy (balf-shrub)			Semi-wet Meadow			Semi-wet Stream Bottom (Riparian)		
	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total
Red Lake	1.51	122	184	.70	1,440	1,008						
Herd Creek				.93	93	87	1.45	139	202			
Road Creek							1.33	10	13			
" "							1.45	37	54			
Round Valley	1.51	20	30									
San Felipe	1.83	1,454	2,661	.81	6,840	5,540	.87	181	157			
" "				.97	2,773	2,690						
Warm Springs	1.22	329	401	.97	382	371	1.54	28	43			
Garden Creek				.81	6	5				.97	74	72
Bald Mountain	1.60	8	13							1.33	64	85
Thompson Creek										1.54	37	57
Split Hoof				.70	84	59				.74	92	68
Squaw Creek										.62	57	35
Spud Creek										.87	23	20
Pine Creek				1.16	6	7						
East Fork	1.89	1	2							2.38	114	271
Sullivan Creek				1.09	1	1				2.03	29	59
Malm Gulch				.97	232	225						
Total		1,934	3,291		11,857	9,993		395	469		490	667
Average, Tons/Acre	1.70			0.84			1.19			1.36		

TABLE 2-14

ESTIMATED ANNUAL SEDIMENT YIELD BY ALLOTMENT AND VEGETATION TYPE (cont.)

	Black Sagebrush (ARARN)			Three-tip Sagebrush (ARTR 4)			Mountain Mahogany (CELE 3)			Shadscale (ATCO)		
Allotment	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total
Red Lake	1.22	3,670	4,477	1.16	1,795	2,082	1.16	138	160	1.16	3,376	3,916
Herd Creek				1.62	716	1,160				2.38	1,008	2,399
Road Creek				1.33	1,267	1,685				2.76	409	1,129
Round Valley				1.02	14	14				1.39	7,903	10,985
San Felipe	.93	2,763	2,570	1.51	6,490	9,800	1.33	2,838	3,775	.90	1,103	993
" "	1.10	2,327	2,560							1.09	800	872
Warm Springs	1.16	1,860	2,157	1.51	3,480	5,255	1.04	320	333	1.39	9,679	13,454
" "	1.45	230	334	1.60	50	80	.93	627	583	1.33	4,839	6,436
" "	1.28	615	787	1.33	1,535	2,042						
Garden Creek	1.33	18	24	1.54	3,691	5,684				1.45	2,115	3,067
Bald Mountain	1.74	157	273	1.28	2,249	2,879	2.52	51	129	2.18	310	676
Split Hoof	1.16	7	8	1.39	509	708				2.12	465	986
Spud Creek				.70	824	577				1.28	186	238
Pine Creek				1.54	482	742						
East Fork				1.60	187	299				2.12	226	479
Malm Gulch	1.51	664	1,003	1.33	44	59	1.74	112	195	1.09	490	534
Total		12,311	14,193		23,333	33,066		4,086	5,175		32,909	46,164
Average, Tons/Acre	1.15			1.42			1.27			1.40		

TABLE 2-14

ESTIMATED ANNUAL SEDIMENT YIELD BY ALLOTMENT AND VECETATION TYPE (cont.)

	Douglas Fir (PSME)			Burn			Rock
Allotment	Tons/Acre	Acres	Total	Tons/Acre	Acres	Total	Acres
Red Lake	.58	1,709	991				1,832
Herd Creek	.81	2,240	1,814				2,743
Road Creek	.68	101	69				1,984
Bruno Creek	.78	1,201	937				70
Round Valley	.54	8	4				911
San Felipe	.68	4,315	2,934				2,093
Warm Springs	.62	628	389				1,660
Carden Creek	.62	1,907	1,182				2,138
Bald Mountain	.68	4,640	3,155	3.57	189	675	3,957
Thompson Creek	.81	1,440	1,166				975
Split Hoof							503
Squaw Creek	.58	931	540				1,671
Spud Creek	.57	841	479				1,343
Pine Creek	.70	205	144				359
East Fork	.61	926	565				1,486
Sullivan Creek	.51	1,331	679				341
Malm Culch	.54	70	38				621
Total		22,493	15,086		189	675	24,687
Average, Tons/Acre	0.67			3.57			

TABLE 2-15

ESTIMATED GEOLOGIC EROSION (SEDIMENT YIELD) OF UNDISTURBED RANGE WITH MAXIMUM POTENTIAL COVER

Vegetation Type	Sediment Yield Tons/Acre
Basin Big Sagebrush (ARTRT)	.35
Wyoming Big Sagebrush (ARTRW)	.49
Mountain Big Sagebrush (ARTRV)	.46
Gray Low Sagebrush (ARARA)	.65
Black Sagebrush (ARARN)	.54
Three-tip Sagebrush (ARTR4)	.49
Mountain Mahogany (CELE 3)	.44
Shadscale (ATCO)	.61
Nuttall Saltbush (ATNU)	.61
Nuttall Tansy (Half-shrub)	.44
Semi-wet Meadow	.29
Semi-wet Stream Bottom	.00
Douglas Fir (PSME)	.44

TABLE 2-16

ESTIMATED NUMBERS OF GAME ANIMALS BY PROPOSED ALLOTMENT IN THE CHALLIS ES AREA a/

Proposed Allotment	Deer 11/1-6/1	Elk 12/1-5/30	Antelope 11/1-4/1 4/1-10/30	Bighorn 11/1-6/1	Blue Grouse	Sage Grouse	Chukars
Red Lake	400		50/30		Few	Many	Few
Herd Creek	500	20	0/10		Many	Few	Few
Road Creek	425	2	0/55	18	Many	Many	Many
Bruno Creek	100	8			Many	None	None
Round Valley	50		115/40		None	Few	Many
San Felipe	187 b/	140	425/223		Many	Many	Few
Warm Springs	175		160/190		Many	Many	Many
Garden Creek	875	40	20/20	23	Few	Many	Many
Pine Creek	200				Many	Few	Few
Spud Creek	290	5	140/15	6	Many	Few	Many
Split Hoof	200		0/30		Few	Few	Few
Thompson Creek	200	19			Many	Few	Few
Bald Mountain	800	5			Many	Few	Many
Squaw Creek	400	18			Many	Few	Few
East Fork	300	5		40	Many	Few	Many
Sullivan Creek	150	5			Many	Few	Few

a/ Populations were estimated by the Idaho Department of Fish and Game. Populations and seasons of use still fluctuate annuallly, dependent upon hunting regulations and weather conditions.

b/ Approximately 37 deer use this allotment as summer and fall habitat.

TABLE 2-17

ESTIMATED PERCENT OF FORAGE CONSUMPTION OF BIG GAME SPECIES IN THE CHALLIS ENVIRONMENTAL STATEMENT AREA

	Winter	Spring	Summer
Deer a/			
Browse	83%	47%	
Forbes	5%	7%	
Grass	12%	43%	
Elk b/			
Browse	16%	5%	
Forbes	34%	43%	
Grass	50%	51%	
Antelope c/			
Browse	90%	50%	55%
Forbes	5%	25%	40%
Grass	5%	25%	5%
Bighorn Sheep d/			
Browse	7%	3%	
Forbes	9%	3%	
Grass	84%	94%	

a/ Kvale (1975)
Wintinger (1978)
Lauer et. al. (1976)
Nicholson (1973)
Money (1974)
Moir (1976)

b/ Kvale (1975)
Wintinger (1978)

c/ Bernt (1976)

d/ Lauer et al., 1976

WILDLIFE

Terrestrial

General. Each of the 13 vegetation types (Map 2-1) within the Challis ES Unit is comprised of several plant communities. Each plant community and its successional stages produce a number of habitats, each supporting a unique animal community. Combination and arrangement of habitats in the Challis ES Area determine which animals utilize the plant communities. The greater the plant community diversity, the greater the diversity of wildlife species (refer to Appendices 3-A, 3-B and 3-C).

There are 291 terrestrial wildlife species (72 mammals, 204 birds, 15 amphibians and reptiles) in the Challis ES Area. A list of species, their habitat relationships, relative abundance, and season of sccurrence is presented in Appendices 3-A, 3-B and 3-C.

Discussion on terrestrial wildlife is directed toward threatened, endangered and sensitive species, game animals and groups of animals with similar life forms on which the proposed action would have significant impacts.

Specific.

Endangered Wildlife. The American peregrine falcon and the bald eagle occur in the Challis ES Area and are officially classified as endangered species. The Bureau of Land Management and the U.S. Fish and Wildlife Service, through informal consultation, have determined that the proposed action would have little or no effect on either species and would not likely jeopardize the continued existence of listed species or result in the destruction or adverse modification of their habitat. Therefore, no further discussion on T&E wildlife appears in this document.

Sensitive Wildlife. Animals occurring in the ES Area, jointly classified as sensitive by the Bureau of Land Management and Idaho Department of Fish and Game (IDFG), whose populations are consistently small and widely dispersed, or ranges restricted to a few localities, or numbers declining so rapidly that official listing as endangered or threatened may become necessary as a conservative measure are: river otter, long-billed curlew, bobcat, Canada lynx, osprey and pigeon hawk. Information on populations and areas of use in the ES Area is limited. Information that is available can be obtained at the Salmon District BLM Office or the IDFG Office in Salmon, Idaho.

Big Game. Major big game animals occurring in the Challis ES Area are elk, deer, antelope, and bighorn sheep. Distribution of each species as well as their crucial habitat is shown on Maps 2-7, 2-8, 2-9 and 2-10. Estimated populations of big game occurring in each allotment is presented in Table 2-16. Population trends are up for deer and bighorn sheep and slightly up for elk. Antelope populations show downward trends on summer ranges and upward trends on winter ranges.

Estimated dietary composition by forage class and by season for each big game species is presented in Table 2-17 and present forage demand by species is in Table 2-18.

Big game habitat and habitat condition acreage by allotment is available in Tables 2-18 and 2-19, as well as season of use.

The extent of use and numbers of animals using big game habitat in the ES Area fluctuates annually. Fluctuations are mostly dependent on annual as well as seasonal weather conditions and habitat conditions on adjacent private and Forest Service lands as well as public domain.

Specific life requirements and site specific ecological interrelationships between big game and habitat components, if available, may be obtained at the Salmon District Office, BLM, or the Idaho Department of Fish and Game, Salmon, Idaho.

Upland Game. Upland game birds found in the Challis ES Area are listed in Table 2-16. Sage grouse, chukars and blue grouse are the most abundant species. Sage grouse and blue grouse habitat is shown on Map 2-11. Chukars are scattered throughout the ES Area in rough canyons and along the breaks and foothills of the Salmon and East Fork of the Salmon Rivers.

Of the 14,195 acres in the unit identified as important brood rearing or nesting habitat for sage grouse, 8,516 acres (60 percent) are classified as being in poor condition, and 5,676 acres (40 percent) are classified as being in fair condition. No areas are considered to be in good condition with respect to sage grouse habitat requirements. Of the 3,626 acres identified as important wintering areas, 913 acres (25.5 percent) are classified as being in fair condition and 2,713 acres (74.8 percent) are classified as being in good condition.

Quantity and quality of blue grouse habitat is generally fair to poor and showing static trend. Reduction of cover in riparian zones and wet meadows has decreased brood rearing and resting habitat for both blue grouse and sage grouse.

Non-Game.

Mammals. Seventy-two mammals occur in the Challis ES Area (Appendix 3-C), 82 percent of which are non-game species. All

TABLE 2-18

BIG GAME HABITAT ACREAGE OCCURRING IN PROPOSED
ALLOTMENTS: ACRES/PERCENT OF ALLOTMENT

Proposed Allotment	Deer		Elk		Bighorn		Antelope		
	11/1-6/1		12/1-5/30		11/1-6/1		11/1-4/1		4/1-10/30
	Normal	Crucial	Normal	Crucial	Normal	Crucial	Normal	Crucial	
Red Lake	7070/29						1933/5	900/4	16050/65
Herd Creek	10867/45	16010/24	6060/25						800/3
Road Creek	13390/80	3397/20	333/2		2159/13	585/4			10800/65
Bruno Creek	810/33		627/26						
Round Valley	3975/29						2850/21	1350/10	12150/90
San Felipe	a/18320/21	1404/2	21318/24	2291/3			7828/7	850/1	67580/79
Warm Springs	7427/12	751/1					4657/7	950/2	56550/90
Garden Creek	26540/84	8083/26	415/1		2631/8	1000/3	2689/8		2689/8
Pine Creek	5026/100	1785/36							
Spud Creek	7910/87	3629/40	614/7		569/6	297/3	820/9	400/4	4800/53
Split Hoof	9140/99	3366/36							7300/79
Thompson Creek	3540/61	448/8	1984/34						
Bald Mountain	13010/54	6942/29	230/1						
Squaw Creek	6110/74	1715/21	2246/27						
East Fork	12940/98	5312/40	40/<1		10639/80	3908/30			
Sullivan Creek	4020/94	1645/39	807/19						
Total Acres	150095	60261	34674	2291	15998	5790	20777	4450	178719

a/ 1290 acres used for summer and fall habitat.

TABLE 2- 19

PRESENT ACRES OF BIG GAME HABITAT CONDITION IN THE CHALLIS ENVIRONMENTAL IMPACT STATEMENT AREA BY ALLOTMENT A/

	Mule Deer B/ Habitat			Elk Habitat			Antelope Habitat B/ (Winter)			Antelope Habitat (Summer)			Bighorn Sheep Habitat		
Allotment	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good
Red Lake	6,858		212				1,122	38	773	6,420	8,828	802			
Herd Creek	10,151	716		882	3,755	1,423				320	440	40			
Road Creek	13,390				333					4,320	5,940	540	237	1,922	
Bruno Creek	810			106	470	51									
Round Valley		2,942	1,033				1,083	1,482	285	4,860	6,683	607			
San Felipe	10,992		7,328	4,264	17,054		4,775	313	2,740	27,032	37,169	3,379			
Warm Springs	4,456	2,005	966				2,142	47	2,468	22,620	31,100	2,830			
Garden Creek	26,540			62	353		2,689			1,076	1,479	134	52	2,447	132
Pine Creek	3,820		1,206												
Spud Creek	7,910				614		820			1,920	2,640	240		569	
Split Hoof	9,140									2,920	4,015	365			
Thompson Creek	3,540			198	1,488	298									
Bald Mountain	12,100	260	650		127	103									
Squaw Creek	6,110			1,123	112	1,011									
East Fork	12,940			26	14									4,788	5,426	425
Sullivan Creek	40	2,974	1,006	89	629	89									
	128,797	8,897	12,401	6,750	24,949	2,975	12,631	1,880	6,266	71,488	98,294	8,937	5,077	10,364	557
Total Acres		150,095			34,674			20,777			178,719			15,998	
Percent of Total	86%	6%	8%	19%	72%	9%	61%	9%	30%	40%	55%	5%	32%	65%	3%

A/ Criteria for habitat condition classification may be found in Appendix

B/ The winter of 1976-77 resulted in an increase of 18% in decadent sagebrush plants due to winter kill. This mortality was sufficient to place large acreages in poor condition. In fifteen years, natural replenishment of the kill will probably bring much of the area back to fair condition.

non-game species are directly or indirectly dependent on vegetation for either forage or cover. Approximately one-third of the non-game mammals compete directly with livestock because of dietary preferences for food items. The most valuable habitat to non-game mammals is the riparian and wet meadow zones. Sixty-nine percent of the non-game mammals use these areas for either feeding or reproduction activities. The habitat quality in these areas is presently in poor condition due to lack of forage and cover.

Birds. Two hundred four bird species exist in the Challis ES Area (Appendix 3-B) of which 90 percent are non-game birds. Approximately 84 percent of the non-game birds are dependent on terrestrial vegetation for food and cover. As with the non-game mammals, the riparian zones and wet meadows provide habitat for a large number of non-game birds. Thirty-one species are dependent upon ground vegetation for nesting cover and 53 species use shrubs or bushes for securing nests. Present use of vegetation by large herbivores inhibits opportunities for meeting the requirement of non-game birds for nesting, cover and forage.

Aquatic

Ten streams in the Challis Planning Unit have been identified in previous investigations (Bjornn and Falter, 1973; Mallet, 1974; Rabe et. al., 1975; USDI, BLM, 1971; and VTN Colorado, 1975) as spawning and/or rearing areas for either steelhead trout or chinook salmon. These streams are:

1. Salmon River
2. East Fork of Salmon River
3. Challis Creek
4. Thompson Creek
5. Squaw Creek
6. Herd Creek
7. Lake Creek
8. Big Lake Creek
9. Big Boulder Creek
10. Little Boulder Creek

A stream survey was conducted in 1977 to evaluate the anadromous fishery habitat in the Challis Planning Unit and determine measures required to protect this critical resource value. The East Fork and main Salmon Rivers were not surveyed; Bayhorse Creek was included in the survey since it probably harbors some steelhead.

Full survey reports are available from the Salmon District Office, BLM, and measures recommended to improve the fishery have been incorporated into management framework plans.

Fish Life Histories and Distribution in Challis Planning Unit.

Chinook salmon and steelhead are the most numerous anadromous fish in the Challis Planning Unit. A remnant run of about 250 sockeye salmon migrates through the unit enroute to Redfish Lake, located in the upper Salmon River drainage. A few Pacific lamprey still spawn in larger streams in the unit.

Resident cold-water game species, including rainbow trout, cutthroat trout, Dolly Varden, brook trout, and whitefish, comprise an important part of the fish fauna of the unit. The known occurrence of gamefish by stream is listed in Table 2-20.

Anadromous fish such as salmon, steelhead, and lampreys perform phenomenal biological feats during their life cycles. Young fish spawned in the Challis Planning Unit are reared in streams and rivers as long as three years before they migrate to the Pacific Ocean. After maturing one to three years in the ocean, the adults swim about 850 miles to their natal streams in the unit to complete their life cycles.

The most important anadromous fish habitats in the Challis Planning Unit are the Salmon and East Fork Rivers, Herd Creek, Squaw Creek, and Thompson Creek, respectively. Challis, Bayhorse, Lake, Big Lake, Big Boulder, and Little Boulder Creeks are used for spawning to a lesser extent (Map 2-12).

Both spring and summer chinook salmon spawn in the unit. The life histories of these two strains are essentially the same and are summarized in Appendix 4.

Summer chinook use over 49 miles of the main Salmon and East Fork Rivers for spawning and rearing. During a ten-year period (1968-1977), Idaho Department of Fish and Game personnel found an annual average of 121 redds in the lower East Fork (East Fork mouth to 3.5 miles below Big Boulder Creek). Redds are conspicuous depressions dug into the stream substrate into which spawning fish deposit their eggs. Approximately 59 summer chinook redds are observed in the main Salmon River within the Challis Planning Unit each year (1968-1977).

Spring chinook spawn in the unit in the East Fork, Herd Creek, Big Boulder Creek, Little Boulder Creek, Thompson Creek, and Squaw Creek. The Idaho Department of Fish and Game counts spring salmon redds in the East Fork and Herd Creek but no estimates are available for the other streams. An average of 368 redds were counted in the upper East Fork (14 miles of river) from 1968 to 1977. About half (7 miles) of the upper East Fork is in the Challis Planning Unit, so about 184 spring chinook redds are attributable to the East Fork within the unit. Only the lower four miles of Herd Creek are checked for salmon redds. An average of 33 redds were observed in this stretch (1968-1977). An additional 3.4 miles of good spawning habitat exists in the unit above this point. It is estimated that 61 spring chinook redds would be counted in Herd Creek within the Challis Planning Unit. This count probably approximates no more than one-half of the actual number of redds (Reingold, 1973) so about 122 salmon redds are constructed in Herd Creek annually.

Steelhead use the Salmon River for migration, rearing, and spawning. Salmon River tributaries that still produce steelhead include Challis, Bayhorse, Lyon, Squaw, and Thompson Creeks. The East Fork and tributaries are also important steelhead habitat; spawning occurs in Herd, Lake, Big Lake, Big Boulder, and Little Boulder Creeks. Population estimates, redd counts, or other indices of steelhead abundance are not available for the unit.

Salmon and steelhead stocks have been diminished drastically in the Columbia River system due to a number of factors. Because anadromous fish are migratory, they are vulnerable to harmful habitat changes in downstream areas as well as those in their "home" streams.

Columbia and Snake River dams, which impede both downstream migrations of young fish and upstream migrations of mature fish, are responsible for much of the decline in anadromous fish populations. Overfishing in the Pacific Ocean and Columbia River by commercial and sportsfishing interests has reduced fish numbers. Water pollution is another downstream problem (USDI, Bureau of Reclamation, 1975).

Deterioration of spawning and rearing habitat for trout and salmon has caused an unquantifiable reduction in the salmonid population in the Challis Planning Unit.

The major problems relative to salmonid production are dewatering of streams, direct fish loss through unscreened diversions, and siltation of stream substrate. Additional problems are associated with removal of riparian vegetation and water quality degradation.

Herd Creek is a major spawning stream in the unit. Seventy percent (20,888 square yards) of the available spawning habitat in Herd Creek was considered sufficiently impacted by silt to inhibit successful salmon spawning. Salmonid egg survival decreases markedly when more than 20 percent of the spawning substrate is composed of "fine" sediments less than 6.33 mm in diameter (Corley, 1976).

Table 2-22 summarizes the amount of "good" (less than 20% "fines") and "marginal" (more than 20% "fines") spawning habitat in the unit. Gravel riffles classified as "marginal" probably receive little anadromous fish spawning use.

Excessive amounts of silt have also reduced the salmonid rearing capacity of some streams. Aquatic insects are the primary food supply of cold water game fish and inhabit spaces between gravel and boulders in the stream substrate. Excessive silt in the stream substrates reduces available food supplies by filling gravel interstices.

Unitwide, 95 miles of stream habitat are available for anadromous fish spawning (Map 2-12).

Of the 43 miles of anadromous fish streams bordered by public land, 28 percent are in fair condition, 61 percent are in good condition, and 11 percent are in excellent condition (Table 2-23). Fifty percent of the anadromous fish habitat bordered by private land is in fair condition; 47 percent is in good condition; 1 percent, poor; and 2 percent, excellent (Table 2-23). Criteria used to evaluate streams are listed in Appendix 4.

Habitat conditions of larger streams supporting anadromous fish are generally better than the 40.3 miles of small tributaries that support only resident fish. Almost all (95%) of the resident trout habitat bordered by public land in "fair" or "poor" condition using criteria developed for the 1977 Challis FES (Table 2-21). Small streams are in fair or poor condition mainly due to lack of streambank vegetation, unstable streambanks and streambed siltation.

Streams like Bayhorse, Big Boulder and Little Boulder Creeks, although in "excellent" condition, do not sustain large populations of anadromous fish. Conversely, upper Herd and Pass Creeks were rated "fair" but support good populations of salmon compared to other streams in the area. These discrepencies reflect natural variations in the capacity of streams to support fish and limiting factors not considered by the habitat evaluation form (i.e., dewatering of streams during summer irrigation seasons).

Low gradient streams in the unit (Challis, Squaw, Thompson and Herd Creeks) are more suitable for anadromous fish spawning than higher gradient streams due to substrate composition; these same streams have sustained the most damage from grazing and stream dewatering because their alluvial valleys are inherently more suitable for agricultural production.

Appendix 4-C identifies the economic value of anadromous fish produced in the Columbia River system. The streams located in the Challis Unit are a significant part of the river system.

TABLE 2-20
GAMEFISH PRESENT IN THE CHALLIS PLANNING UNIT

Stream	Gamefish Present
Salmon River	CS, SS, SH, CT, RBT, DV, WF
Challis Creek	CS, SH, CT, RBT, DV, WF
Mill Creek	CT
Garden Creek	CT
Birch Creek	Trout
Bayhorse Creek	SH, CT, RBT, BT
Lyon Creek	SH, RBT
Spud Creek	Trout
Kinnikinic Creek	CT
Sullivan Creek	Trout
Squaw Creek	CS, SH, CT, RBT, DV, WF
Bruno Creek	SH, CT
French Creek	Trout
Thompson Creek	CS, SH, CT, RBT, DV, WF
East Fork River	CS, SH, CT, RBT, DV, WF
Road Creek	CT, RBT
Horse Basin Creek	Trout
Mosquito Creek	Trout
Bear Creek	CT, RBT
Herd Creek	CS, SH, CT, RBT, DV, WF
Lake Creek	SH, RBT
McDonald Creek	Trout
Fox Creek	Trout
Pine Creek	Trout
Big Lake Creek	SH, CT, RBT, DV, WF
Big Boulder Creek	CS, SH, CT, RBT, DV, WF
Little Boulder Creek	CS, SH, CT, RBT, DV, WF

CS=chinook salmon
SS=sockeye salmon
SH=steelhead
CT=cutthroat trout
RBT=rainbow trout
DV=Dolly Varden
BT=brook trout
WF=whitefish

TABLE 2- 21

PRESENT HABITAT CONDITIONS OF RESIDENT TROUT STREAMS ON PUBLIC LAND IN THE CHALLIS PLANNING UNIT

	Miles of Streams by Condition Class			
Stream	Poor	Fair	Good	
Mill Creek		3.6		
Birch Creek	2.0			
Bayhorse Creek		0.5		
Lyon Creek		0.3		
Spud Creek	1.2			
Kinnikinic Creek		2.5		
Sullivan Creek			1.5	
Bruno Creek		2.4		
French Creek	1.4			
Road Creek	7.2	0.8		
Horse Basin	4.0			
Mosquito Creek	1.7			
Bear Creek	1.1			
Lake Creek		6.4		
Pine Creek		1.8		
Big Lake Creek			0.4	
Warm Springs		1.5		
Total Miles	18.6	19.8	1.9	40.3
	46%	49%	5%	100%

1/ From 1977 Challis FES with revisions from 1977 BLM survey.

TABLE 2-22

ANADROMOUS FISH SPAWNING HABITAT IN CHALLIS UNIT

Stream (miles)	"Good" Spawning 1/ Gravel (square yards)	"Marginal" Spawning 2/ Gravel (square yards)
Challis Creek (8.5)	1,444	11,435
Bayhorse Creek (3.0)	384	688
Squaw Creek (5.5)	3,244	10,667
Thompson Creek (8.0)	1,206	3,168
Herd Creek (7.5)	9,117	20,888
Lake Creek (0.5)	65	435
Big Lake Creek (1.0)	1,075	1,368
Big Boulder Creek (1.5)	20	126
Little Boulder Creek (2.0)	29	281
Total	16,584	49,074

1/ Less than 20 percent "fines" in spawning-sized gravel

2/ More than 20 percent "fines" in spawning-sized gravel

TABLE 2-23

HABITAT CONDITIONS OF STREAMS USED BY ANADROMOUS FISH

	Miles - Public Lands				Miles - Private & State				
Stream	Poor	Fair	Good	Excellent	Poor	Fair	Good	Excellent	Total Miles
Salmon River		3.5	14.0			3.5	14.0		35.0
Challis			0.50		0.25	4.75	3.0		8.5
Bayhorse			0.15	1.65			0.75	0.55	3.1
Lyon					0.30				0.3
Squaw		0.80	0.90	0.20		2.00	1.60		5.5
Bruno		0.60							0.6
Thompson		1.95	5.40	0.25		0.30			7.9
East Fork		4.0	1.0			13.0 a/	3.2 a/		21.2
Herd		1.20	2.60			2.00	1.60		7.4
Lake			0.40				0.10		0.5
Big Lake			0.90				0.10		1.0
Big Boulder			0.30	0.90			0.20	0.10	1.5
Little Boulder				1.80				0.30	2.1
Total		12.05	26.15	4.80	0.55	25.55	24.55	0.95	94.6
Percent		28%	61%	11%	1%	50%	47%	2%	

a/ Values extrapolated from % fair/good on public lands, 1977 Challis ES.

WILD HORSES

After passage of the Wild Horse and Burro Act of 1971 locations of wild horse bands were mapped for the Challis Unit. The largest concentration of wild horses is between Road Creek and Spar Canyon (Map 2-13).

Table 2-24 shows the actual count made in 1978 of wild horses in the unit. The net rate of increase since 1971 through 1977 is 20-24 percent.

TABLE 2-24

WILD HORSE NUMBERS AND FORAGE NEEDS

Allotment	Numbers	Forage Needs/AUMs
Road Creek	64	960
San Felipe	129	1,935
Red Lake	53	795
Split Hoof	41	615
Warm Springs	275	4,125
Malm Gulch	24	360
Totals	586	8,790

The distribution of the horses changes with the seasons. During winter months most bands concentrate on low elevational ridges within Road Creek, Warm Springs, Split Hoof, Malm Gulch Allotments.

During the winter months, some horses (about 15 percent) choose to remain at higher and intermediate elevations and survive primarily on the windswept ridges. These ridges are usually barren of any sizeable cover and are extremely cold due to the wind. It appears that large canopy cover is not necessary for winter survival.

Forage availability becomes limited during the winter months. Map 2-14 shows areas where heavy horse concentrations occur in the winter months. Table 2-24 shows the present forage needs by wild horses by allotment. Table 2-25 is the percentage of winter area available by allotment.

Overuse of wild horse wintering areas (Map 2-14) is an item of concern. The wintering country available to wild horses becomes limited and wild horses are forced to concentrate on certain areas where they depend upon the forage present for sustenance. Some of these sites are the first areas that cattle are allowed to use in the spring. Grazing during the spring, summer and fall by livestock eliminates forage for wild horses. Wintering wildlife utilize some of these areas, also.

TABLE 2-25

PERCENTAGE OF THE WILD HORSE AREA AVAILABLE DURING THE WINTER1/

Allotment	Total Acres	Acres Available	Percent Available
Road Creek	15,565	13,579	87
San Felipe	81,316 2/	50,989	63
Red Lake	23,195	12,424	54
Split Hoof	8,415	8,135	97
Warm Springs	59,703	54,037	90
Malm Gulch	9,136	7,050	77
Total	197,330	146,214	

1/Includes only federal range
2/Includes 14,600 acres of Pecks Canyon

There are approximately 106 bands of wild horses averaging five horses per band. Each band establishes a home range with a fairly well defined boundary. Home ranges for several different bands overlap. A general idea of home range size can be determined from observations of the five marker bands during different seasons of the year. Map 2-13 shows the relative size of their home ranges as determined by their greatest distance of travel. The largest home range was exhibited by the Sorrel Bunch, which was roughly six miles by three miles. The smallest home range belonged to Burro Bunch Number Two, which was roughly three miles by three miles.

Movement patterns for individual bands were determined by observing the marker bands. Most bands do not move over four square miles during any time or season. Daily movement is generally feed-water related.

The sex ratio for the adult horse population appears to be 60 percent female and 40 percent male. This is an estimate based on direct observation. Most breeding occurs between April 1 and June 15, although some breeding does occur during other times of the year. This is evidenced by observation of a few colts being born in the months of July through December, while most foaling occurs between April 1 and June 15. Most foaling occurs in warm exposure in areas which are free of wind. Judging from the overall size, vigor and conformation, inbreeding does not appear to be a significant problem. An analysis of the age ratio of the population indicates that nearly one-half of the horses now using the Challis wild horse range are two-year-olds or younger.

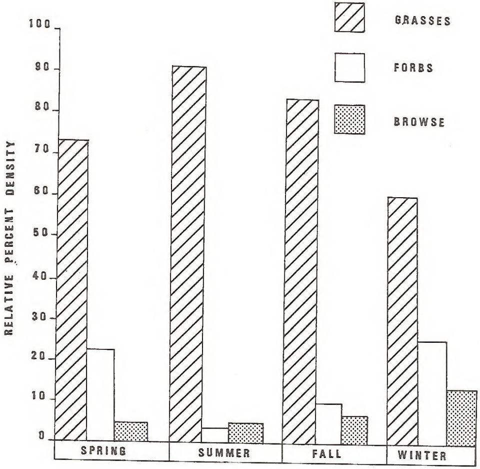
Vegetation throughout the horse area is predominantly sagebrush-grass. Therefore, most horses live in this type of cover year-round. Figure 2-1 shows the diet of the Challis wild horses. In the hot summer months, horses spend some time in the willows and other riparian vegetation but they more often seek out the higher elevations and ridge-tops. On windy days, horses have been observed to lie down in some of the larger patches of sagebrush for protection. Judging from the dung piles, horses will spend a substantial amount of time among trees if they are available.

Much of the wild horse area is in poor to fair condition. Wild horses graze the area yearlong.

Fences identified on Map 2-14 cause modification of wild horse movement and caused two deaths in 1975-76 from entanglement with a barbed wire fence.

FIGURE 2-1

COMPARATIVE USE OF GRASSES, FORBS, AND BROWSE BY SEASON OF YEAR



LIVESTOCK GRAZING

The production of range beef cattle and calves is the predominant agricultural land use within the Challis Planning Unit. Thirty-eight permittees graze their cattle on 12 grazing areas within the unit.

The permittees utilize public lands and/or National Forest Lands (NFL) with their private lands in order to have a yearlong ranching operation. The average yearlong ranching operation in the unit grazes approximately 16 percent of the time on public lands, 14 percent NFL, and 70 percent private lands to produce its beef.

The permittees operate typical cow-calf operations. The cows are bred to calve between late January and April. Calves are weaned and sold in the late fall when they return from their summer-fall pastures. Typically, cattle are driven to the spring ranges on public lands between May 1 and May 16 and remain there for a month to six weeks grazing period. From there the animals are put on summer ranges in late June or July on either public lands, the Sawtooth National Recreation Area (SNRA) or on high elevation public lands range. In late summer the animals are driven to fall ranges on public lands or they are taken to private lands for grazing purposes.

Hay, grain, and pasture produced on private, irrigated lands are used for winter feeding. Approximately 97 percent of the national public lands within the Challis Unit are utilized for grazing purposes by the permittees licensed in the unit.

SOCIO-ECONOMICS

Population

Between 1950 and 1976 the population of Custer County remained relatively stable at 3,300 persons. However, in 1960 and 1970, the population was slightly lower and the percentage increase from 1970 to 1976 was slower than the state as a whole. There have been approximately .6 persons per square mile from 1950 to 1976 (Idaho Division of Budget, Policy Planning and Coordination, 1978). In 1970 22.5 percent of the population was classified by the Bureau of the Census as rural farm and 77.5 percent as rural non-farm; there was no urban population.

TABLE 2-26

POPULATION: CUSTER COUNTY STATISTICS, 1950-1976, 1995

	1950	1960	1970	1976	1995
Population	3,318 a/	2,996 a/	2,967 a/	3,300 a/	4,817 b/
Pop./sq. mi.	.7	.6	.6	.7	1.02

Source: a/ Idaho Division of Budget, Policy Planning & Coordination, 1978.
b/ Idaho Department of Water Resources, 1976.

The Economy

Custer County, located in mountainous central Idaho has historically been a natural-resource-oriented economy. Mining and lumber operations were the predominant sources of income.

The largest employment sector in 1975 was agriculture with 24 percent of the total. State and local government workers were the second largest group with approximately 20 percent. Manufacturing and financial workers were the smallest groups in 1975.

In 1975, agriculture in Custer County was a basic industry employing 333 persons. It employed a greater percentage of the population than the percentage employed state-wide in agriculture. This indicates that agriculture is an industry that exports goods to markets outside of Challis and brings ranchers money from outside the county. There is a relatively large number of federal, state and local workers in Custer County. Recreation is also an important seasonal source of income. Summer and fall visitors spend money in the area but do not contribute to overall economic stability (see Table 2-27).

Between 1970 and 1975, personal income in Custer County increased 53 percent while personal income in Idaho increased 80 percent. The real growth in personal income, discounting the effects of inflation, in Custer County increased ten percent while real personal income at the state level increased 30 percent (see Table 2-28).

Total farm labor and proprietors' income (as defined by the U.S. Department of Commerce, 1977) between 1970 and 1975 averaged 21 percent of total personal income. In 1975, because of inventory losses, farm labor costs and proprietors' income was less than five percent.

Table 2- 27

EMPLOYMENT CUSTER COUNTY 1975, 1995

	1975		1995	
Major Industry	Employ-ment	Percent Distribution	Employ-ment	Percent Distribution
Agriculture	333	24.12%	290	14.6%
Manufacturing	15	1.12	16	.81
Mining	40	2.90	10	.50
Transportation	61	4.42	107	5.40
Trade	129	9.32	199	10.03
Finance	22	1.56	30	1.51
Federal civilian	120	8.66	126	6.33
State & Local	273	19.77	521	26.19
Services	131	9.45	291	14.64
Other non-ag.	258	18.68	398	19.99
Total	1381	100.00%	1989	100.00%

Source: Idaho Department of Water Resources, 1976.

In 1974 there were 201 farm proprietors in Custer County, a decrease of almost two percent from 1969. Livestock gross income increased during the same period from $828,000 to $1,355,000. The value of farmland and buildings in 1974 was $46 million and the average farm value was approximately $232,000. Fifty-eight percent of the farms in 1974 were 260 acres and larger (Bureau of the Census, 1977).

Table 2-28

CUSTER COUNTY, IDAHO
PERSONAL INCOME BY MAJOR SOURCES 1975 (thousands of dollars)

Total Labor and Proprietors Income by Place of Work

By Type	
Wage and Salary Disbursements	6,275
Other Labor Income	356
Proprietors Income	597
Farm	-139
Non-farm	730
By Industry	
Farm	539
Non-farm	6,689
Private	3,589
Manufacturing	100
Mining	1,064
Contract construction	Deleted
Wholesale and retail trade	824
Finance, insurance, real estate	280
Transp., comm., and public utilities	461
Services	663
Other industries	Deleted
Government	3,120
Federal, civilian	1,773
Federal, military	73
State and local	1,274

Derivation of Personal Income by Place of Residence

Total labor and proprietors income by place of work	7,228
Less: Personal contributions for social insurance by place of work	460
Net labor and proprietors income by place of work	6,768
Plus: Residence adjustment	103
Net labor and proprietors income by place of residence	6,871
Plus: Dividends, interest, and rent	2,345
Plus: Transfer payments	2,185
Personal income by place of residence	11,401
Per capita income	3,435

Livestock Operators

There are 38 operators in the Challis environmental study area.

TABLE 2-29

Number of Brood Cows	Number	Operators in the ES Area by Size
100 or less	16	42%
101 to 250	15	39%
Greater than 250	7	18%
Total	38	100%

In 1972, average net ranch income for a sample taken in Custer County was $11,665, but in 1975, ranchers in the same area experienced a net loss of almost $1,000. Gross returns were down from 1972 levels and total expenses increased (see Table 2-30). The general feeding pattern for these ranches included grazing on public lands from May 1 to October 1, after which private forage was used (Godfrey, 1976).* Approximately one-third of the ranchers worked half of the time off the ranch (see Table 2-30).

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*Research is presently underway to determine 1978 costs and expenses for ranchers in the ES study area. This data will be available for the Final Challis Supplement.

Table 2-30
AVERAGE RETURNS FOR 110 RANCHERS,
CUSTER COUNTY, IDAHO, 1972 and 1975

	Average per Ranch		Average per Animal Unit*	
	1972	1975	1972	1975
Returns				
Sale of Calves	$23,797	$18,509	$131.11	$101.98
Sale of Yearlings	7,121	5,222	39.23	28.77
Sale of Cull Cows and Bulls	3,489	2,790	19.23	15.37
Other Receipts	460	522	2.53	3.04
Gross Returns	34,867	27,073	192.10	149.16
Expenses				
Land Rent	380	400	2.09	2.20
Feed	3,805	5,860	20.96	32.28
Livestock Expenses	599	922	3.30	5.09
Livestock Purchased	10,930	8,197	60.22	45.16
Insurance	511	787	2.82	4.34
Labor Expense	2,505	3,676	13.80	20.25
Taxes	1,367	2,007	7.53	11.06
Seed	571	879	3.14	4.84
Fertilizer	196	302	1.08	1.66
Machinery Operating Expenses	1,636	2,519	9.01	13.88
Repairs	1,161	1,787	6.39	9.85
Utilities	432	616	2.38	3.40
Federal Grazing Fees	631	896	3.48	4.94
Association Fees	483	743	2.66	4.10
Supplies	110	169	.61	.93
Misc. Expenses	120	190	.68	1.05
Total Cash Expenses	25,437	29,950	140.15	165.03
Net Ranch Cash Income (Gross returns minus cash expenses)	9,430	-2,877	51.95	-15.87
Estimated Misc. Income	727	727	4.01	4.01
Change in Inventory	1,508	1,206	8.31	6.64
Net Ranch Income-Net Ranch Cash Income Plus (or Minus) Change in Inventory and Ranch Misc. Income	11,665	-944	64.27	-5.22
Return for Operator Labor	7,600			
Average Ranch Capital	218,898			
Return to Capital	1.86%			

*Average per number of brood cows owned.

Public Values and Attitudes

This section is based on 12 interviews conducted by BLM social scientists. Thirteen local residents expressed their views about the Challis area's values and way of life and their perception of the impacts of the proposed action. One conversation included two respondents. (See Appendix 6-B for a description of methodology.)

Federal Management and Local Control. The one fact which, more than any other, seems to determine the social destiny of the Challis Planning Unit is that over 96 percent of Custer County is controlled by government agencies (BLM, USFS, and Idaho Fish and Game Dept.). This fact was spontaneously mentioned by three-quarters of those interviewed. The area's way of life, based on government-dependent activities of livestock grazing, mining, and timber, is susceptible to the overwhelming influence of governmental decisions about resource management. Respondents from the area tended to place BLM's grazing management plan in the context of other agencies' restrictive actions, painting an overall picture of an accelerating erosion of the ability of the local population to control its own destiny.

Proposed reductions in BLM grazing privileges are seen as yet another instance of insensitive decision making by distant authorities who lack knowledge and understanding of local conditions and who fail to take into account the efforts of local citizens to explain them. A third of those interviewed expressed a conviction that BLM district officials lacked the authority to make decisions concerning them, and half asserted public participation mechanisms were employed only to meet regulations while their testimony went unheeded by decision makers. As one respondent put it, "We're knowledgeable whether the government thinks so or not." Four of those interviewed cited an inability to trust the word of government officials. In a community where honesty and integrity seem to be one of the highest virtues, the breach of faith perceived by these respondents can be viewed as a sign of profound disaffection from government. This disaffection results from the proposed action seen in the context of other government actions disfavored by local citizens. Some such actions include EPA constraints on mining, Forest Service restrictions on grazing and timber cutting, U.S. Army Corps of Engineers' regulations on streambank maintenance, and Occupational Safety & Health Administration's unpredictable inspections. Together, these were defined by three respondents as government "harassment."

BLM Management of Wild Horses. A major sore point with respondents from Custer County is the wild horse issue. Eight persons raised the subject, maintaining there are more wild horses than BLM estimates, there are too many of them, they are increasing their numbers and expanding their territory at a rapid rate, and encroaching on the ranges of other forms of wildlife.

The allocation of forage to wild horses in the proposed action, resulting in reductions in allocations for livestock, was criticized by seven respondents. None expressed approval of BLM's wild horse policy. One respondent said, "It's almost as if wild horses are more important than people," while another asserted, "We're just as important as wild horses."

Wild horses are resented for their impact on forage local people would prefer to see allocated to livestock, but the issue is also cited as another example of imposition on the Challis area of non-local judgment and values. Two respondents pointed out the interest groups fighting for the protection of wild horses come from outside the area and do not understand local conditions or care about the welfare of local residents. BLM was viewed as being more responsive to environmentalists than to local user groups.

Social Implications of Recreation Development, Subdivision and Wilderness. Recreation development in Custer County is strongly determined by federal policy and would interact with BLM's proposed action to influence the options of affected livestock operators. The recent heavy transfer of private acreage near Stanley to federal ownership under the National Recreation Area has displaced a reportedly strong demand for second home development from the Stanley Basin to the East Fork area of the Challis Planning Unit. The area is scenic, and most respondents reported pressure on land owners there to sell to developers for subdivision into residential lots. Most past sales have reportedly entailed small (scenic but relatively "useless") portions of ranch properties, except for one rancher who recently sold out completely to a "developer from Reno" and moved away. This event evidently made a strong impression on local residents, since it was mentioned in five interviews. Two-thirds of the respondents mentioned land sales to subdivisions as a means of economic survival following BLM grazing cuts, but all added this would be done with the greatest reluctance. The implication was that selling out was viewed as the most economically feasible but nevertheless least desirable option available to operators suffering severe cuts in grazing privileges, particularly in the East Fork area. Reasons given for resisting the subdivision solution were: 1) Subdivision would harm wildlife. (Four respondents.) Some mentioned the most desirable land for subdivision is also the most sensitive wildlife habitat. 2) A lot of outsiders moving into the area would be undesirable. (Six respondents.) Eight respondents remarked they and their neighbors disliked congested urban settings and wanted Custer County to stay as it is. One said he preferred the "rural, honest, people-centered lifestyle" of the area to remain unchanged. One referred to a population increase of 700 in "six or seven years" as "a vast influx of people." One respondent who had sold several acres for residential development said he regretted it: "Financially it's o.k , but I don't like the atmosphere with city people for neighbors. They think they can snap their fingers and have the city way of life but they don't contribute to the community." Half of those interviewed indicated they would welcome newcomers who "fit into the community" and contribute to community life. Several mentioned hospitality and neighborliness as local qualities they were proud of.

As one respondent put it, local people are "on the fence" about the trend toward subdivision. While it would increase the county's diminishing tax base (noted by five respondents), many people doubt they would welcome the changes in the character of the community likely to result from significant population growth.

WATER RESOURCES

Water Use

Total consumptive water use by the major wildlife species and wild horses in the unit is estimated to be 5,257,812 gallons per year or 16 acre-feet per year. Livestock consume an estimated 5,233,200 gallons per year or 16 acre-feet per year. Consumptive water requirements by individual species are shown on Table 2-31.

TABLE 2-31

CURRENT CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK, WILD HORSES AND WILDLIFE

Animal	Total Gallons/Year
Deer	2,190,510
Antelope	265,512
Elk	233,550
Bighorn Sheep	36,720
Wild Horses	2,531,520
Livestock	5,233,200
	10,491,012
	or 32 acre feet/year

The Challis municipal water supply originates in the Garden Creek drainage. The minicipal water demand is currently 584 acre-feet annually. The only other community in this unit, Clayton, supplies water to its residents from wells. All other domestic water in the area is obtained from wells or springs. Most of the 40 man-made earthern reservoirs within the unit hold water for no more than a few months at any one time.

Streamflow

Approximately 94 percent of streamflows in the unit drain into the Salmon River, with the remainder flowing into the Big Lost River. The United States Geological Survey (USGS) maintain 18 stream gauging stations in rivers and streams in the unit (Map 2-12). Maximum and minimum flows at various stations are listed in Table 2-32.

The Big Lost River seeps underground near Arco and probably contributes to the recharge of the Snake River aquifer. Year-round streamflow is maintained by snowmelt in the higher mountains and some springs. All water resources located within the unit are found on Map 2-12.

Water Quality

Physical, chemical and biological data affecting water quality was collected from U.S. Geological Survey river gauging stations (Water Resources Data for Idaho, Water Years 1969-1976). USGS data was supplemented with information gathered in a 1975 stream survey conducted by the University of Idaho (Fred W. Rabe, Ph.D.), a 1977 Bureau of Land Management stream survey and a 1976-1978 stream survey conducted by Region 10 of the Environmental Protection Agency.

Solute concentrations of the major inorganic constituents, measured as dissolved solids (mg/l), increase in the Salmon River in a downstream direction as shown in Table 2-33. An increase in solute concentrations (total dissolved solids) occurs because of an increase in inorganic constituents. This tends to affect overall water quality in various ways, depending on the present condition of the water.

Concentrations of total dissolved solids decrease with an increase in flow, while concentrations of suspended sediment increase with an increase in flow, a phenomenon typical of most perennial streams (Table 2-33). Sediment yields are influenced by parent material, soils, climate, runoff, topography, land use and vegetative cover. The suspended sediment yields by allotment are listed on Table 2-33.

All available data gathered from surveys, combined with information received from the District Seven Health Department indicates that chemical and biological characteristics of water originating on public lands within the unit present no water quality problems to irrigation, recreation, domestic use, livestock, wildlife, cold-water fisheries, and ground water recharge. There were short periods in which certain parameters failed to meet standards established by the Environmental Protection Agency. With the exception of temperature and phosphorus levels, the durations usually corresponded with spring runoff and high intensity

TABLE 2-32

DISCHARGE RATES (CFS) DURING LOW-FLOW AND CREST-STAGE

Station Number	Station Name	Location	Date	Annual Maximum (CFS)	Annual Minimum (CFS)
13296500	Salmon River Below Yankee Fork, Near Clayton	Lat.44°16'06", long 114°43'55", in sec. 20,T11N.,R15E.,(unsurveyed), Custer County, 700 ft. (213 m) downstream from Yankee Fork, 18 mi (29 km) upstream from Clayton, at at mile 366.9 (590 km).	3/24/69		327
			5/27/69	5,820	
			3/18/70		327
			6/08/70	6,340	
			3/18/71		429
			6/26/71	7,470	
			6/08/72	8,740	
13298500	Salmon River Near Challis	Lat.44°22'43", long 114°15'18", in SE¼SE¼ sec. 7, T12N.,R19E.,Custer County, 250 ft. (76 m) downstream from Bayhorse Creek, 9 mi (14 km) south of Challis, and at mile 334.8 (539 km).	2/09/69		510
			5/27/69	8,340	
			1/07/70		412
			6/08/70	9,280	
			1/04/71		414
			6/27/71	12,100	
			12/02/71		536
			6/10/72	14,000	

TABLE 2-33

INFLUENCE OF FLOW ON DISSOLVED SOLIDS AND SUSPENDED SEDIMENT

13296500 SALMON RIVER BELOW YANKEE FORK, NEAR CLAYTON, IDAHO

LOCATION--Lat.44°16'06", long 114°43'55", in sec. 20, T11N.,R15E., (unsurveyed), Custer County, Challis National Forest, on left bank 700 ft. downstream from Yankee Fork, 18 miles upstream from Clayton, and at mile 366.9.

Date	Flow (CFS)	Dissolved Solids (MG/L)	Suspended Sediment (MG/L)
May, 1971	2,920	58	17
June, 1971	6,440	45	32
July, 1971	2,410	48	7
September, 1971	706	73	3
October, 1971	716	89	1
June, 1972	5,820	31	41
July, 1972	1,340	57	3
October, 1972	668	78	
April, 1973	828	67	
June, 1973	1,740	48	
October, 1973	500	81	
June, 1974	4,650	46	

13298500 SALMON RIVER NEAR CHALLIS, IDAHO

LOCATION--Lat.44°22'43", long 114°15'18", in SW¼SE¼SE¼ sec. 7, T12N.,R19E., Custer County, on left bank 250 ft. downstream from Bayhorse Creek and 9 miles south of Challis.

Date	Flow (CFS)	Dissolved Solids (MG/L)	Suspended Sediment (MG/L)
May, 1971	4,680	65	56
June, 1971	10,100	64	172
July, 1971	3,700	64	7
September, 1971	1,160	99	2
October, 1971	1,100	93	
June, 1972	8,760	57	
July, 1972	2,020	78	
October, 1972	1,090	104	7
April, 1973	1,100	85	10
June, 1973	3,170	62	22
October, 1973	600	108	
June, 1974	14,000	52	32,300

summer storms. Stream temperatures sometimes exceed optimum levels for salmonids because of high ambient air temperatures and/or reduced streamflows, but the duration is not enough to cause direct mortality of salmonids. The elevated levels of phosphorus have no detrimental impact ot water quality or aquatic life and are a natural occurrence in the unit.

RECREATION RESOURCES

Hunting and fishing are a very popular recreation pursuit in the State of Idaho.

Hunting

It is estimated that 20,000 hunter-days were expended in the Unit in 1974.

Big Game	16,000 hunter-days
Upland Game	4,000 hunter-days
	20,000 hunter-days

Fishing

Estimated fisherman-days in 1974, 10,000.

The basis for these estimates is discussed in the Proposed Domestic Livestock Grazing Program for the Challis Planning Unit Final Environmental Statement, released January 1977.

Wild Horses

There is no data on the number of people and visitor days spent viewing wild horses in the unit.

CULTURAL RESOURCES

Identification

Cultural resources are defined as those non-renewable, fragile, and finite remains of human activity, occupation, and endeavor as reflected in districts, sites, structures, artifacts, objects, ruins, works of art, and architecture or documentation that are located on public lands. In general, cultural resources are usually thought of in terms of prehistoric and historic values. However, in broader terms, cultural resources represent a continuum of human values extending from the earliest human events to the most recent.

All of the cultural resources thus far identified in the Challis Planning Unit are prehistoric and historic sites. Briefly, a site can be defined as any locus where traces of human activity are found (Plog Hill, 1973).

To date, there are 268 known cultural sites on public lands in the Challis Unit. Of these, 50 are considered to be of possible National Register quality.

Table 2-34 contains a brief description of the known cultural sites within the unit and identifies ownership of the land the site occurs on.

Summary of Unknown Cultural Resources

Based upon the combined results of the 1975 random and non-random surveys, it is estimated that 1,000 prehistoric and historic sites presently exist in the unit. Of these, approximately one-third are known while two-thirds remain unknown.

WILDERNESS

Under Section 603 of the Federal Land Policy and Management Act, BLM is responsible for ensuring that the public lands are inventoried for wilderness characteristics (as described in the Wilderness Act of 1964). Those lands with wilderness characteristics are to be managed so as not to impair their suitability for preservation as wilderness.

The Bureau has issued draft wilderness policy and review procedures, and is now in the process of analyzing public comment on the draft, with an anticipated release of the final procedures by late summer 1978.

Using the final procedures, Bureau personnel will identify roadless areas and evaluate them for wilderness characteristics. Following an initial determination by district personnel, the evaluation report will be subjected to public review for a period of 60 days, including a mailout of the report and public meetings. As a result of the evaluation and public input, a decision will be made on whether roadless areas have wilderness characteristics, thus warranting their identification as wilderness study areas.

It is anticipated the inventory for wilderness characteristics will begin approximately October 1978.

Due to the need for final procedures before conducting the inventory, and the length of time required for evaluation of areas

TABLE 2-34
KNOWN CULTURAL RESOURCES IN CHALLIS UNIT

Cultural Resources	Attributes/Condition	Period	
		Prehistoric	Historic
A. National Register			
10-CR-196	Two component, Bison Jump, excavated by Idaho State University in 1970.	X	X
Bayhorse a,b/	Early day mining town; ca.1880 to 1925. Approximately 50% of buildings still standing.		X
10-CR-385	A lookout/hunting blind/habitation/quarry complex with a small spring.	X	
B. Possible National Register Eligible			
10-CR-69	Campsite around a spring; good depth. Some erosion and trampling.	X	
10-CR-71	Campsite along a small creek; good depth; features, and much lithic detritus. Erosion and construction have damaged site.	X	
10-CR-74	Campsite along a small creek; good depth. Some erosion and trampling by livestock.	X	
10-CR-92	Rockshelter with pictographs; vandalized. Some rubbing and trampling by livestock.	X	
10-CR-98	Two campsites around a small lake; good depth and one midden deposit. Some trampling by livestock.	X	
10-CR-103	Campsite along Salmon River; features and good depth. Some erosion by river and trampling by livestock.	X	
10-CR-106	Campsite along Salmon River; features and good depth. Some erosion by river and trampling by livestock.	X	
10-CR-118	Campsite along Salmon River; features and good depth. Some erosion by river and trampling by livestock.	X	
10-CR-152	Campsite around a spring; heavy concentration of lithic detritus. Damaged by spring development and trampling by livestock.	X	
10-CR-176	Campsite near confluence of two small streams; good depth and concentration of lithic tools. Some trampling by livestock.	X	
10-CR-282	Campsite along a small stream; good depth and heavy concentration of lithic detritus and tools. Damaged by erosion and trampling of livestock.	X	
10-CR-339	Campsite along a small spring; good depth and heavy concentration of lithic detritus and tools. Slight trampling by livestock.	X	
10-CR-515	Campsite around a spring; some depth and heavy concentration of lithic detritus and tools. Some damage by development and livestock trampling.	X	
10-CR-344	Campsite around a spring; good depth and features. Some trampling by livestock.	X	
10-CR-359	A series of eight talus hunting blinds and one small concentration of lithic detritus, all located around a marshy spring.	X	
10-CR-414		X	
10-CR-450		X	
10-CR-451		X	
10-CR-513			
10-CR-361	Campsite along a small creek; good depth, features, scattered lithic detritus and tools. Damaged by livestock trampling, road construction and erosion.	X	
10-CR-363	Campsite along a small stream; good depth and features. Slight vandalism and trampling by livestock.	X	

TABLE 2-34 (Continued)

10-CR-409	A series of 27 talus hunting blinds near the mouth of a small canyon.	X	
10-CR-410		X	
10-CR-411		X	
10-CR-412		X	
10-CR-425		X	
10-CR-427	Small freighting town of Crystal of the late 1870s and early 1880s. Stone foundations are all that remain. Some vandalism and trampling by livestock.		X
10-CR-428			X
10-CR-429			X
10-CR-430			X
10-CR-423	Poverty Flat mining area of the 1880s. Four log cabins and the remains of the Silver Bell mine. Some vandalism.		X
10-CR-424			X
10-CR-455			X
10-CR-435	Campsite along a creek; some depth, features, extensive area of lithic detritus and tools. Damaged by road construction, trampling by livestock and erosion.	X	
10-CR-437	High concentration of lithic detritus and associated talus hunting blind near creek. Road goes through site and trampling by livestock.	X	
10-CR-439	Campsite and historic homestead around a small spring. Prehistoric campsite disturbed by historic activity; trampling by livestock and erosion continuing.	X	X
10-CR-456	Campsite along Salmon River; good depth, features, shell middens and lithic detritus. Road goes through site which is subjected to trampling by livestock.	X	
10-CR-463	Campsite along Salmon River; good depth, features, lithic detritus. Some trampling by livestock and erosion.	X	
10-CR-467 c/	Campsite around a small spring; good depth, lithic detritus and tools. Some trampling by livestock and erosion.	X	
10-CR-485	Rockshelter near creek; deep deposit with smoke stained roof.	X	
10-CR-499	Campsite with possible semi-subterranean house depressions, possible burials on nearby talus slope and extensive lithic scatter. Some trampling by livestock.	X	
10-CR-506	Campsite around a spring; good depth and extensive concentration of lithic detritus and tools. Damaged by spring development and trampling by livestock.	X	
Anderson Ranch	Log ranch house in good condition; log barn collapsed. No date.	X	
Challis-Mackay freight/stage rd. Challis-Bayhorse freight/stage rd. Bayhorse-Mackay freight/stage rd.	Sections of these early mining period freight and stage roads are in fair to good condition. These sections should be preserved/protected from grading and extensive vehicular use.	X	
Site of Challis-Mackay Road Ferry on the Salmon River and associated structures	Ferry is gone but some buildings are standing.		X
C. Non-National Register Eligible 222 b/ Total	Campsites, rockshelters, caves, talus hunting blinds, and lithic scatters with little or no depth. Many are extensively damaged.	X	
Penal cabin	Log homestead in good condition; no date.		X

---

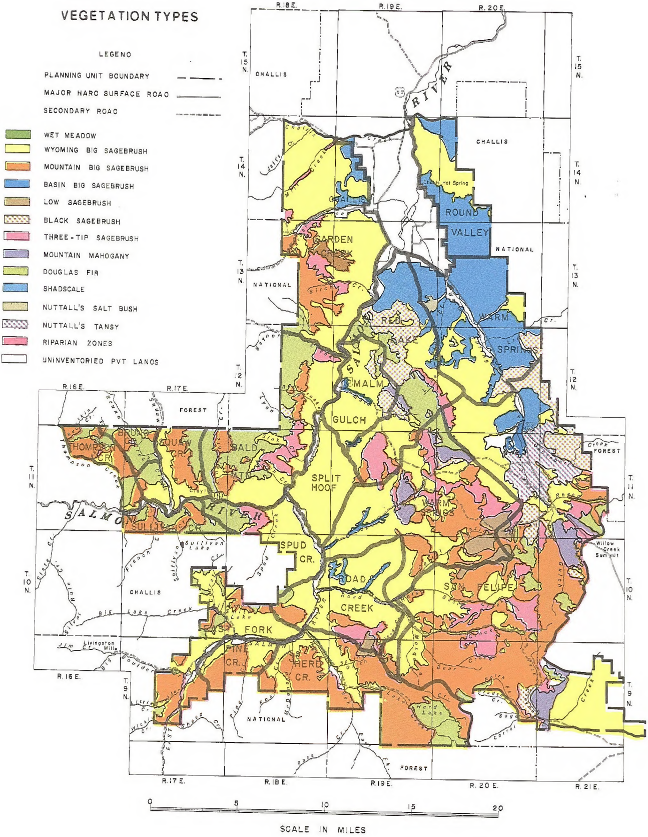
a/Private property.

b/Federal, state and private property; of these, 21 sites are on private property, and 5 are partly on private property and partly on Federal or State property.

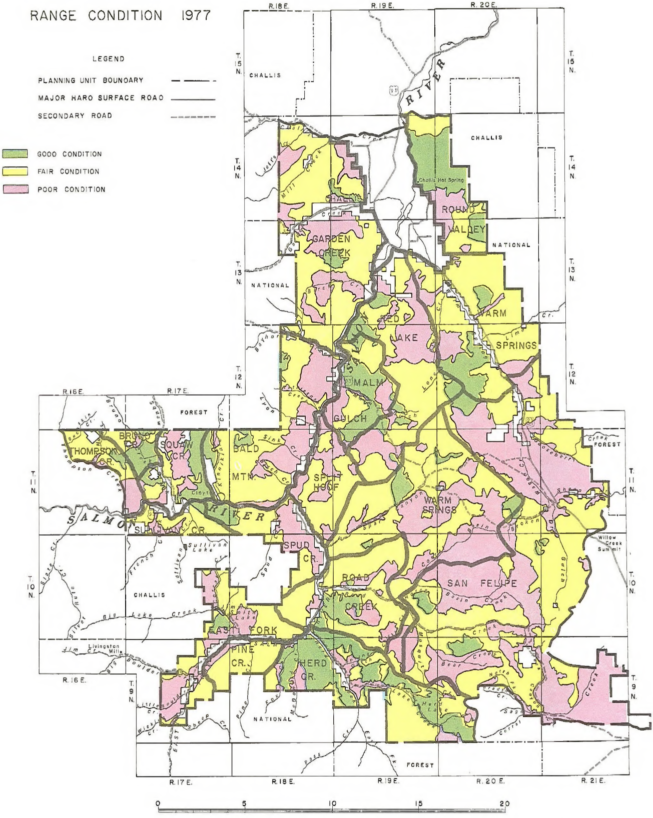
c/State property.

and public input, the evaluation process cannot be accomplished on the ES area within the limited time requirements for the draft/final of this ES.

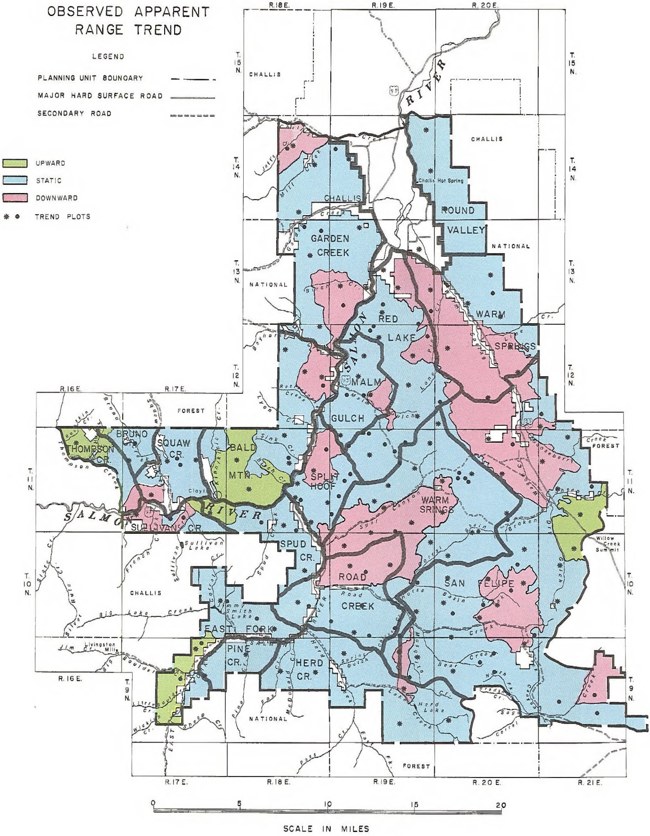
Thus, until the inventory can be accomplished, areas that may have wilderness characteristics are to be managed so as not to impair their suitability for wilderness preservation.


VEGETATION TYPES
LEGEND
PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
WET MEADOW
WYOMING BIG SAGEBRUSH
MOUNTAIN BIG SAGEBRUSH
BASIN BIG SAGEBRUSH
LOW SAGEBRUSH
BLACK SAGEBRUSH
THREE-TIP SAGEBRUSH
MOUNTAIN MAHOGANY
DOUGLAS FIR
SHADSCALE
NUTTALL'S SALT BUSH
NUTTALL'S TANSY
RIPARIAN ZONES
UNINVENTORIED PVT LANDS
R.18E.
R.19E.
R.20E.
R.16E.
R.17E.
R.21E.
T. 15 N.
T. 14 N.
T. 13 N.
T. 12 N.
T. 11 N.
T. 10 N.
T. 9 N.
CHALLIS
NATIONAL
FOREST
RIVER
Challis Hot Spring
ROUND VALLEY
GARDEN CREEK
RED LAKE
WARM SPRINGS
MALM GULCH
SALMON
BRUNO CR.
THOMPSON CR.
SQUAW CR.
BALD MTN
SPLIT HOOF
SALMON RIVER
SULLIVAN CR.
WARM SPGS
SPUD CR.
ROAD CREEK
SAN FELIPE
SMITH FORK
PINE CR.
HERD CR.
Herd Lake
Willow Creek Summit
Livingston Mill
Sullivan Lake
Bear Creek
Big Lake Creek
0
5
10
15
20
SCALE IN MILES

MAP 2-1 VEGETATION TYPES


RANGE CONDITION 1977
LEGEND
PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
GOOD CONDITION
FAIR CONDITION
POOR CONDITION
R.18E.
R.19E.
R.20E.
R.16E.
R.17E.
R.21E.
T. 15 N.
T. 14 N.
T. 13 N.
T. 12 N.
T. 11 N.
T. 10 N.
T. 9 N.
CHALLIS
NATIONAL
FOREST
RIVER
SALMON
Challis Hot Spring
ROUND VALLEY
CHALLIS
GARDEN CREEK
WARM SPRINGS
RED LAKE
MALM GULCH
BRUNO CR.
SQUAW CR.
THOMPSON CR.
BALD MTN.
SPLIT HOOF
SULLIVAN CR.
SPUD CR.
ROAD CREEK
SAN FELIPE
EAST FORK
PINE CR.
HERD CR.
Willow Creek Summit
Sullivan Lake
Jimmy Smith Lake
Livingston Mill
Herd Lake
SCALE IN MILES
0
5
10
15
20

MAP 2-2 RANGE CONDITION


OBSERVED APPARENT RANGE TREND
LEGEND
PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
UPWARD
STATIC
DOWNWARD
TREND PLOTS
R.16E.
R.17E.
R.18E.
R.19E.
R.20E.
R.21E.
T. 15 N.
T. 14 N.
T. 13 N.
T. 12 N.
T. 11 N.
T. 10 N.
T. 9 N.
CHALLIS
NATIONAL
FOREST
SALMON
RIVER
Challis Hot Spring
ROUND VALLEY
CHALLIS
GARDEN CREEK
RED LAKE
WARM SPRINGS
MALM GULCH
BRUNO CR.
THOMPSON CR.
SQUAW CR.
BALD MTN.
SPLIT HOOF
SULLIVANS CR.
SPUD CR.
ROAD CREEK
SAN FELIPE
EAST FORK
PINE CR.
HERD CR.
Willow Creek Summit
Sullivan Lake
Jimm Smith Lake
Herd Lake
Livingston Mill
Clayton
SCALE IN MILES
0
5
10
15
20

MAP 2-3 APPARENT RANGE TREND

MAP 2-4

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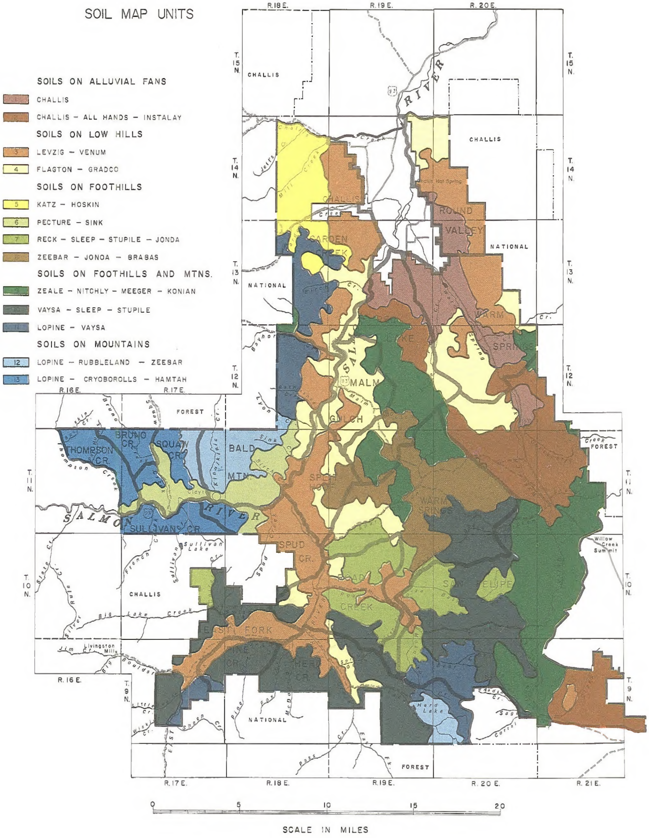
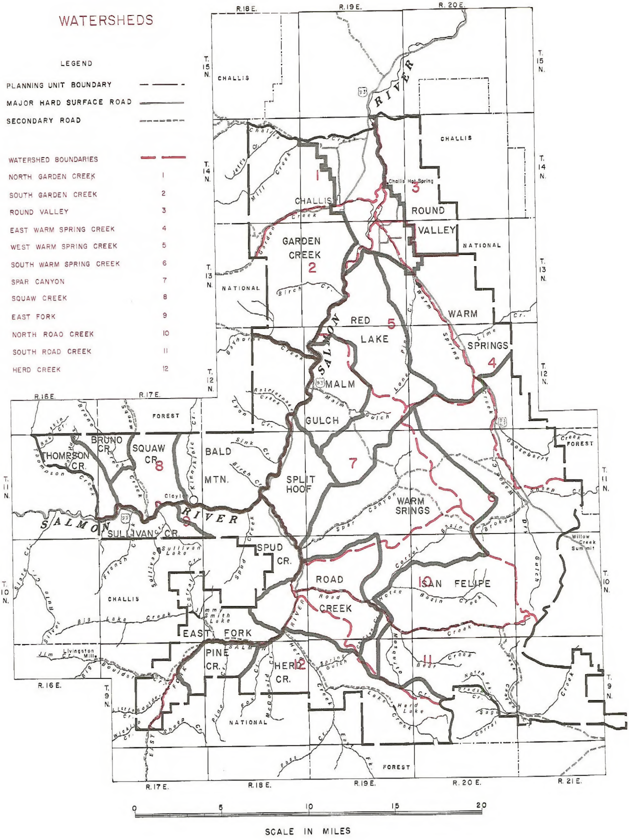
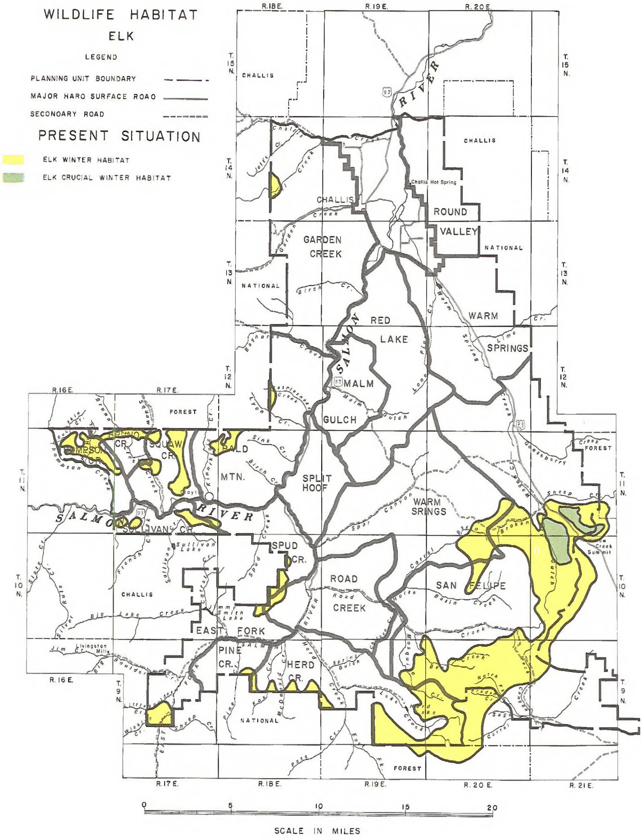

SOIL MAP UNITS
SOILS ON ALLUVIAL FANS
1 CHALLIS
2 CHALLIS – ALL HANDS – INSTALAY
SOILS ON LOW HILLS
3 LEVZIG – VENUM
4 FLAGTON – GRADCO
SOILS ON FOOTHILLS
5 KATZ – HOSKIN
6 PECTURE – SINK
7 RECK – SLEEP – STUPILE – JONDA
8 ZEEBAR – JONOA – BRABAS
SOILS ON FOOTHILLS AND MTNS.
9 ZEALE – NITCHLY – MEEGER – KONIAN
10 VAYSA – SLEEP – STUPILE
11 LOPINE – VAYSA
SOILS ON MOUNTAINS
12 LOPINE – RUBBLELAND – ZEEBAR
13 LOPINE – CRYOBOROLLS – HAMTAH
R.16E.
R.17E.
R.18E.
R.19E.
R.20E.
R.21E.
T.15N.
T.14N.
T.13N.
T.12N.
T.11N.
T.10N.
T.9N.
CHALLIS
NATIONAL
FOREST
SALMON RIVER
CHALLIS
ROUND VALLEY
GARDEN CREEK
WARM SPRINGS
MALM GULCH
BALD MTN.
THOMPSON CR.
BRUNO CR.
SQUAW CR.
SULLIVAN CR.
SPUD CR.
ROAD CREEK
EAST FORK
HERD CR.
HERD LAKE
Willow Creek Summit
Livingston Mill
SCALE IN MILES
0
5
10
15
20

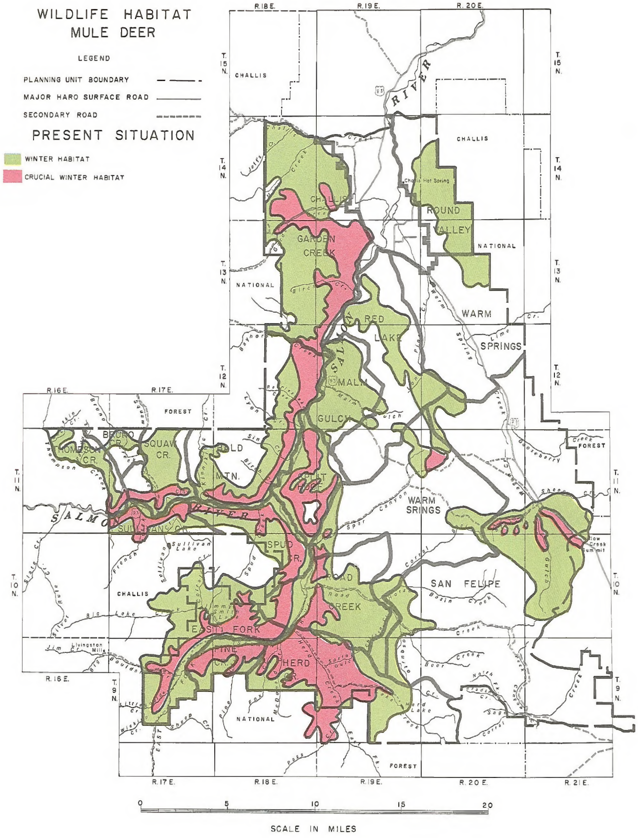
MAP 2-5 SOIL ASSOCIATION


WATERSHEDS
LEGEND
PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
WATERSHED BOUNDARIES
NORTH GARDEN CREEK 1
SOUTH GARDEN CREEK 2
ROUND VALLEY 3
EAST WARM SPRING CREEK 4
WEST WARM SPRING CREEK 5
SOUTH WARM SPRING CREEK 6
SPAR CANYON 7
SQUAW CREEK 8
EAST FORK 9
NORTH ROAD CREEK 10
SOUTH ROAD CREEK 11
HERD CREEK 12
R.18 E.
R.19 E.
R.20 E.
R.16 E.
R.17 E.
R.21 E.
T. 15 N.
T. 14 N.
T. 13 N.
T. 12 N.
T. 11 N.
T. 10 N.
T. 9 N.
CHALLIS
NATIONAL
FOREST
SALMON RIVER
CHALLIS
Challis Hot Spring
ROUND VALLEY
GARDEN CREEK
RED LAKE
WARM SPRINGS
MALM GULCH
BALD MTN.
SPLIT HOOF
WARM SRINGS
BRUNO CR.
SQUAW CR.
THOMPSON CR.
SULLIVAN CR.
SPUD CR.
ROAD CREEK
SAN FELIPE
EAST FORK
PINE CR.
HERD CR.
Clayton
Willow Creek Summit
Jimmy Smith Lake
Livingston Mills
Herd Lake
Sullivan Lake
1
2
3
4
5
6
7
8
9
10
11
12
0
5
10
15
20
SCALE IN MILES

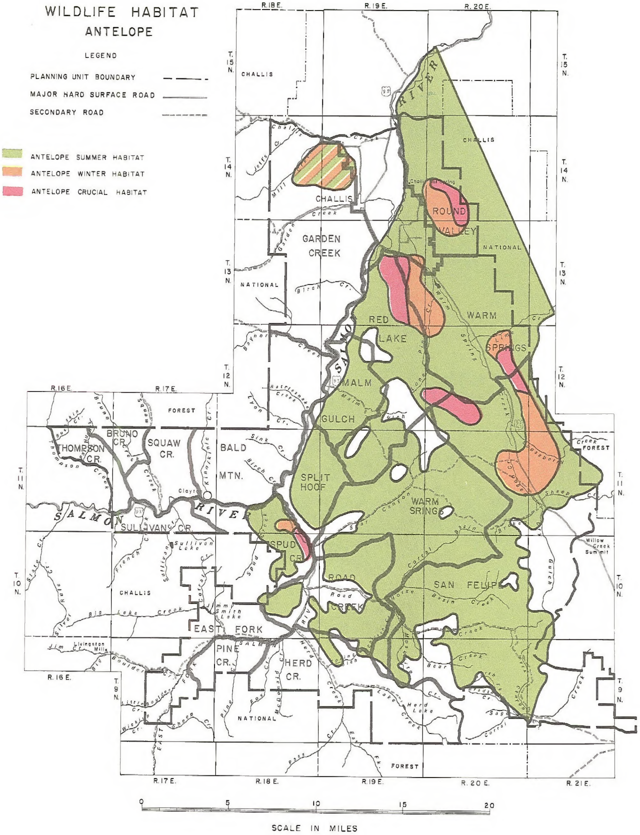
MAP 2-6 WATERSHED


WILDLIFE HABITAT
ELK
LEGEND
PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
PRESENT SITUATION
🟨 ELK WINTER HABITAT
🟩 ELK CRUCIAL WINTER HABITAT
R.18E.
R.19E.
R.20E.
R.16E.
R.17E.
R.21E.
T. 15 N.
T. 14 N.
T. 13 N.
T. 12 N.
T. 11 N.
T. 10 N.
T. 9 N.
CHALLIS
CHALLIS
ROUND
VALLEY
GARDEN
CREEK
NATIONAL
RED
LAKE
WARM
SPRINGS
MALM
GULCH
FOREST
BRUNO
CR.
SQUAW
CR.
BALD
MTN.
SPLIT
HOOF
WARM
SPRINGS
SIMPSON
CR.
SULLIVAN CR.
SALMON
RIVER
SPUD
CR.
ROAD
CREEK
SAN FELIPE
EAST FORK
PINE
CR.
HERD
CR.
NATIONAL
FOREST
CHALLIS
Challis Hot Spring
Willow Creek Summit
Herd Lake
Livingston Mill
Jimmy Smith Lake
Sullivan Lake
0
5
10
15
20
SCALE IN MILES

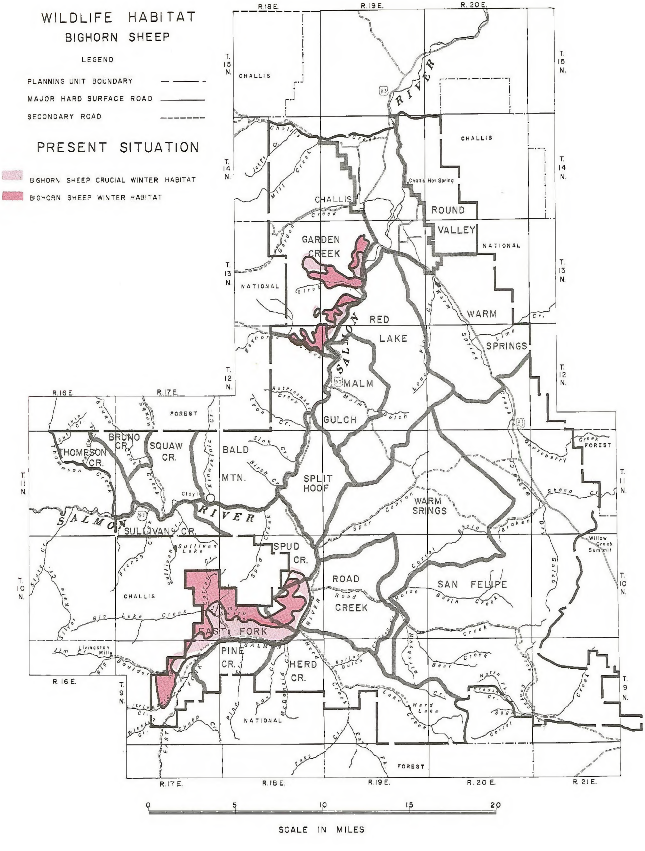
MAP 2-7 WILDLIFE HABITAT - ELK


WILDLIFE HABITAT
MULE DEER
LEGEND
PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
PRESENT SITUATION
🟩 WINTER HABITAT
🟥 CRUCIAL WINTER HABITAT
R.18E.
R.19E.
R.20E.
T. 15 N.
T. 15 N.
T. 14 N.
T. 14 N.
T. 13 N.
T. 13 N.
T. 12 N.
T. 12 N.
T. 11 N.
T. 11 N.
T. 10 N.
T. 10 N.
T. 9 N.
T. 9 N.
R.16E.
R.17E.
R.16 E.
R.17 E.
R.18 E.
R.19 E.
R.20 E.
R.21 E.
CHALLIS
CHALLIS
CHALLIS
CHALLIS
NATIONAL
NATIONAL
NATIONAL
FOREST
FOREST
FOREST
RIVER
SALMON
SALMON
RIVER
Challis Hot Spring
ROUND VALLEY
GARDEN CREEK
RED LAKE
WARM SPRINGS
MALM GULCH
BRUNO CR.
THOMPSON CR.
SQUAW CR.
BALD MTN.
SPLIT ROCK
SULLIVAN CR.
SPUD CR.
WARM SPRINGS
ROAD CREEK
SAN FELIPE
EAST FORK
PINE CR.
HERD CR.
Willow Creek Summit
Sullivan Lake
Jimmy Smith Lake
Herd Lake
Livingston Mill
0
5
10
15
20
SCALE IN MILES

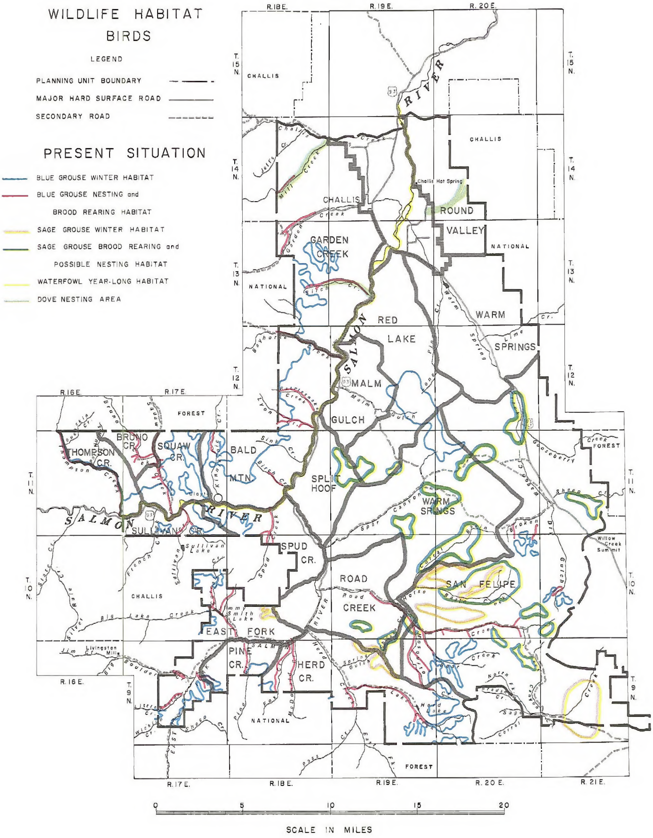
MAP 2-8 WILDLIFE HABITAT - DEER


WILDLIFE HABITAT
ANTELOPE
LEGEND
PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
ANTELOPE SUMMER HABITAT
ANTELOPE WINTER HABITAT
ANTELOPE CRUCIAL HABITAT
R.18E.
R.19E.
R.20E.
R.16E.
R.17E.
R.21E.
T. 15 N.
T. 14 N.
T. 13 N.
T. 12 N.
T. 11 N.
T. 10 N.
T. 9 N.
CHALLIS
NATIONAL
FOREST
ROUND VALLEY
GARDEN CREEK
RED LAKE
WARM SPRINGS
MALM GULCH
SPLIT HOOF
BALD MTN.
THOMPSON CR.
BRUNO CR.
SQUAW CR.
SULLIVAN CR.
SPUD CR.
ROAD CREEK
SAN FELIPE
EAST FORK
PINE CR.
HERD CR.
SALMON RIVER
Clayton
Challis Hot Spring
Willow Creek Summit
Herd Lake
Jimmy Smith Lake
Sullivan Lake
Livingston Mill
0
5
10
15
20
SCALE IN MILES

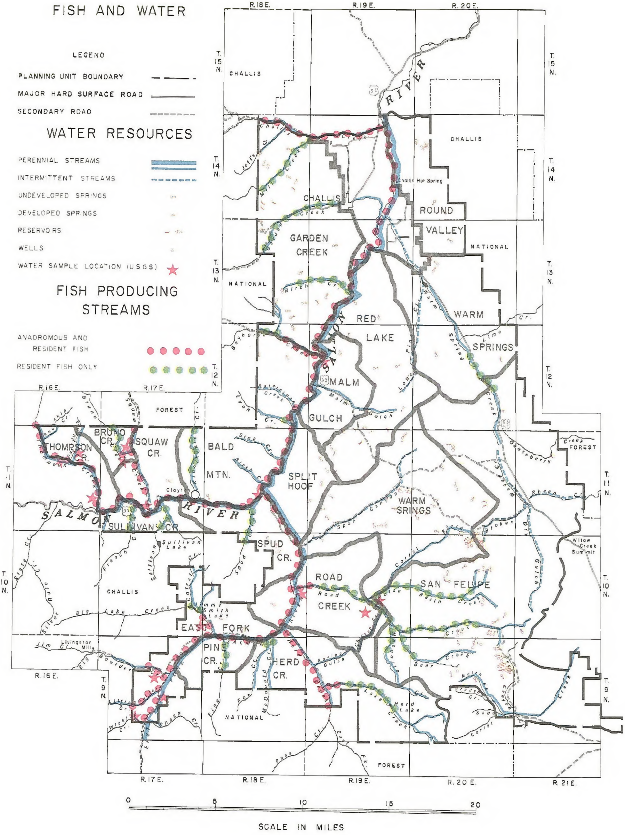
MAP 2-9 WILDLIFE HABITAT - ANTELOPE


WILDLIFE HABITAT
BIGHORN SHEEP
LEGEND
PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
PRESENT SITUATION
BIGHORN SHEEP CRUCIAL WINTER HABITAT
BIGHORN SHEEP WINTER HABITAT
R.18 E.
R.19 E.
R. 20 E.
R.16 E.
R.17 E.
R.21 E.
T. 15 N.
T. 14 N.
T. 13 N.
T. 12 N.
T. 11 N.
T. 10 N.
T. 9 N.
CHALLIS
NATIONAL
FOREST
SALMON RIVER
Challis Hot Spring
CHALLIS
ROUND VALLEY
GARDEN CREEK
RED LAKE
WARM SPRINGS
MALM GULCH
BRUNO CR.
THOMPSON CR.
SQUAW CR.
BALD MTN.
SPLIT HOOF
WARM SRINGS
SULLIVAN CR.
SPUD CR.
ROAD CREEK
SAN FELIPE
EAST FORK
PINE CR.
HERD CR.
Clayton
Sullivan Lake
Livingston Mill
Willow Creek Summit
Herd Lake
0
5
10
15
20
SCALE IN MILES

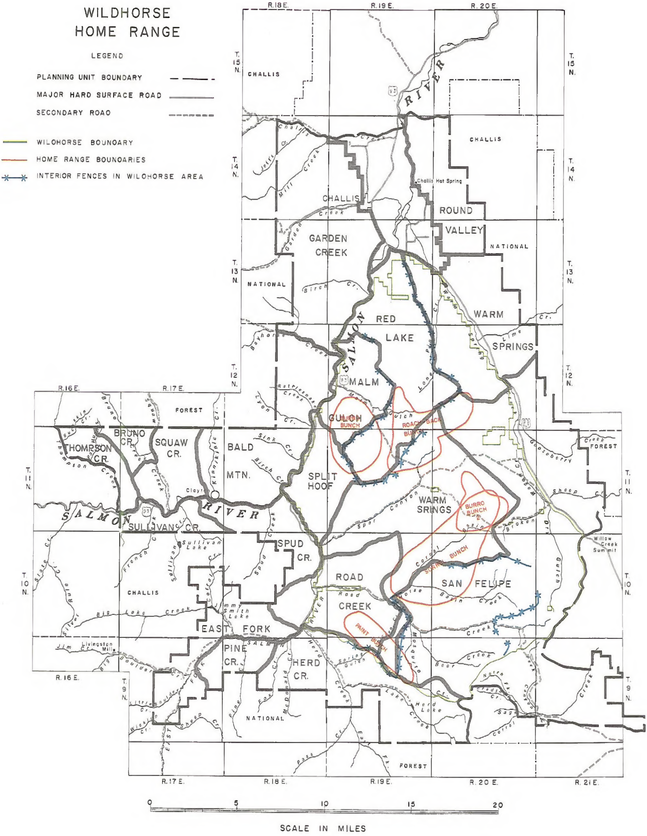
MAP 2-10 WILDLIFE HABITAT - BIGHORN SHEEP


WILDLIFE HABITAT
BIRDS
LEGEND
PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
PRESENT SITUATION
BLUE GROUSE WINTER HABITAT
BLUE GROUSE NESTING and BROOD REARING HABITAT
SAGE GROUSE WINTER HABITAT
SAGE GROUSE BROOD REARING and POSSIBLE NESTING HABITAT
WATERFOWL YEAR-LONG HABITAT
DOVE NESTING AREA
R.18E.
R.19E.
R.20E.
R.16E.
R.17E.
R.21E.
T. 15 N.
T. 14 N.
T. 13 N.
T. 12 N.
T. 11 N.
T. 10 N.
T. 9 N.
CHALLIS
RIVER
CHALLIS
Challis Hot Spring
ROUND
VALLEY
NATIONAL
CHALLIS
GARDEN CREEK
NATIONAL
WARM
SPRINGS
RED
LAKE
SALMON
MALM
GULCH
FOREST
BRUNO CR.
THOMPSON CR.
SQUAW CR.
BALD MTN.
SPLIT HOOF
WARM SPRINGS
SALMON
RIVER
SULLIVANS CR.
SPUD CR.
ROAD CREEK
SAN FELIPE
Willow Creek Summit
CHALLIS
EAST FORK
PINE CR.
HERD CR.
NATIONAL
FOREST
Livingston Mill
R.16E.
R.17E.
R.18E.
R.19E.
R.20E.
R.21E.
0
5
10
15
20
SCALE IN MILES

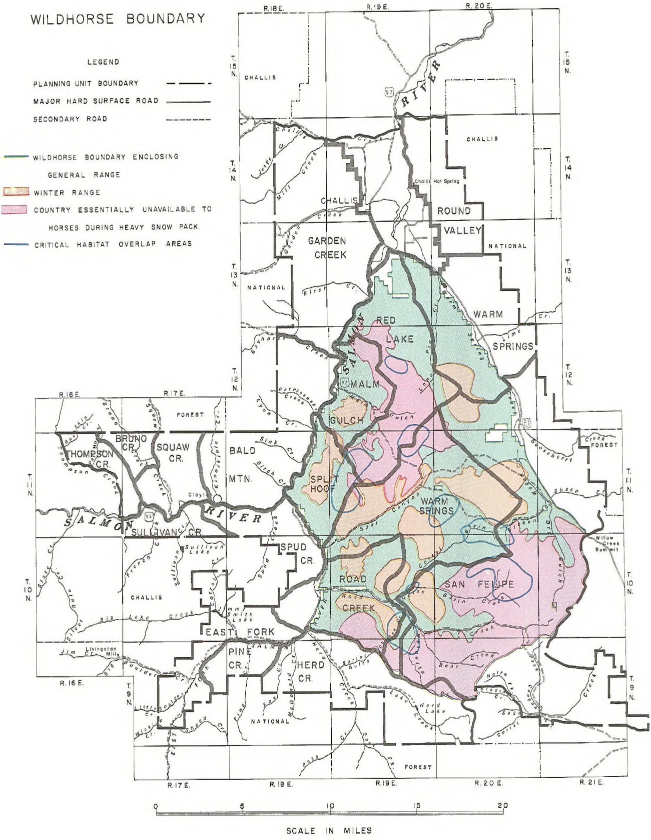
MAP 2-11 WILDLIFE HABITAT - BIRDS


FISH AND WATER
LEGEND
PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
WATER RESOURCES
PERENNIAL STREAMS
INTERMITTENT STREAMS
UNDEVELOPED SPRINGS
DEVELOPED SPRINGS
RESERVOIRS
WELLS
WATER SAMPLE LOCATION (USGS) ★
FISH PRODUCING STREAMS
ANADROMOUS AND RESIDENT FISH ● ● ● ● ●
RESIDENT FISH ONLY ● ● ● ● ●
R.18E.
R.19E.
R.20E.
R.16E.
R.17E.
R.21E.
T. 15 N.
T. 14 N.
T. 13 N.
T. 12 N.
T. 11 N.
T. 10 N.
T. 9 N.
CHALLIS
NATIONAL
FOREST
SALMON RIVER
Challis Hot Spring
ROUND VALLEY
GARDEN CREEK
RED LAKE
WARM SPRINGS
MALM GULCH
BALD MTN.
SPLIT HOOF
THOMPSON CR.
BRUNO CR.
SQUAW CR.
SULLIVAN CR.
SPUD CR.
ROAD CREEK
SAN FELIPE
EAST FORK
PINE CR.
HERD CR.
WARM SRINGS
Clayton
Willow Creek Summit
Sullivan Lake
Jimmy Smith Lake
Livingston Mill
Herd Lake
0 5 10 15 20
SCALE IN MILES

MAP 2-12 FISH AND WATER


WILDHORSE HOME RANGE
LEGEND
PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
WILDHORSE BOUNDARY
HOME RANGE BOUNDARIES
INTERIOR FENCES IN WILDHORSE AREA
R.18E.
R.19E.
R.20E.
R.16E.
R.17E.
R.21E.
T.15N.
T.14N.
T.13N.
T.12N.
T.11N.
T.10N.
T.9N.
CHALLIS
RIVER
CHALLIS
Challis Hot Spring
ROUND
VALLEY
NATIONAL
GARDEN CREEK
NATIONAL
RED
LAKE
WARM
SPRINGS
SALMON
MALM
GULCH
BURRO BUNCH
ROACH BACK BUNCH
FOREST
BRUNO CR.
THOMPSON CR.
SQUAW CR.
BALD MTN.
SPLIT HOOF
Clayton
SALMON
RIVER
SULLIVAN CR.
FOREST
WARM SRINGS
BURRO BUNCH 2
SPUD CR.
CHALLIS
ROAD CREEK
SORREL BUNCH
SAN FELIPE
PAINT BUNCH
EAST FORK
PINE CR.
HERD CR.
NATIONAL
FOREST
Willow Creek Summit
Livingston Mill
Jimmy Smith Lake
Sullivan Lake
Herd Lake
0
5
10
15
20
SCALE IN MILES

MAP 2-13 WILD HORSE HOME RANGE


WILDHORSE BOUNDARY
LEGEND
PLANNING UNIT BOUNDARY
MAJOR HARD SURFACE ROAD
SECONDARY ROAD
WILDHORSE BOUNDARY ENCLOSING GENERAL RANGE
WINTER RANGE
COUNTRY ESSENTIALLY UNAVAILABLE TO HORSES DURING HEAVY SNOW PACK.
CRITICAL HABITAT OVERLAP AREAS
R.16E.
R.17E.
R.18E.
R.19E.
R.20E.
R.21E.
T. 15 N.
T. 14 N.
T. 13 N.
T. 12 N.
T. 11 N.
T. 10 N.
T. 9 N.
CHALLIS
NATIONAL
FOREST
SALMON RIVER
CHALLIS
ROUND VALLEY
GARDEN CREEK
WARM SPRINGS
RED LAKE
MALM GULCH
SPLIT HOOF
WARM SPRINGS
SAN FELIPE
ROAD CREEK
THOMPSON CR.
BRUNO CR.
SQUAW CR.
BALD MTN.
SULLIVAN CR.
SPUD CR.
EAST FORK
PINE CR.
HERD CR.
Challis Hot Spring
Clayton
Willow Creek Summit
Livingston Mill
Jimmy Smith Lake
Sullivan Lake
Herd Lake
93
SCALE IN MILES
0
5
10
15
20

MAP 2-14 WILD HORSE BOUNDARIES

Chapter 3

Environmental Impact of the Proposed Action

INTRODUCTION

Impacts are analyzed for those environmental elements predicted to be significantly impacted by implementation of the proposed action. Based on the analysis, no significant impacts are predicted to occur on the following environmental elements: Climate, Topography, Minerals, Geology and Visual Resources.

The impacts analyzed in this chapter are mitigated impacts based on implementation of the proposed action (which includes mitigation) as designed and described in Chapter 1.

IMPACTS

Vegetation

The proposed action would result in several beneficial and adverse impacts to vegetation. The proposed overall downward adjustment of 40 percent in livestock grazing would result in a reduction of the magnitude of adverse impacts that are presently occurring within the Challis Unit. Adverse impacts to vegetation usually occur as a result of the following factors:

1. Heavy utilization of annual forage production - This situation lowers vegetative vigor, prevents adequate seed production, and discourages reproduction of desirable species. It also reduces the amount of vegetative litter on the ground surface and promotes overland flow of water resulting in excessive soil loss.

2. Early spring grazing - Forage plants depend upon an adequate storage of carbohydrate reserves to insure a food supply when rapid growth begins in the spring. About 75 percent of the carbohydrate reserve is used during the spring season in order to produce about 10 percent of the herbage growth. The carbohydrate storage is made during the growing season and reaches its peak during late autumn. If grazing is allowed during the spring season when plants are drawing heavily upon their own food reserves, it tends to deplete their carbohydrate reserves and leaves the plant in a low state of vigor. The following spring, the plant is left with an inadequate storage of carbohydrates, resulting in poor growth, lowered vegetative vigor, and inadequate seedling establishment. If moderate to heavy spring grazing is allowed year after year, it will eventually kill the desirable forage plants.

3. Repeated grazing treatments during growing season - This practice tends to defoliate the desirable forage plants and prevents them from producing adequate leaves and photosynthetic tissue.

Under these conditions, the plants are unable to produce seed and reproduction is, therefore, reduced or eliminated. If this practice is continued over a period of several years, it will end in the same results as (1) and (2) above.

4. Inadequate livestock distribution - Livestock tend to congregate in areas where desirable forage and water is readily available. They stay in these areas until the vegetation or water is depleted. The livestock then begin using forage in areas of difficult accessibility and of low palatability. They also begin travelling further distances to water. If livestock are allowed to concentrate in the same areas year after year, it eventually results in the removal of desirable perennial vegetation and promotes the establishment of undesirable annual vegetation. It can also cause localized soil compaction problems that can lead to removal of all vegetation and result in accelerated erosion problems. The compaction problem can be compounded if livestock are allowed to congregate during the spring season on heavy clay soils when the moisture content is high.

The most serious impacts resulting from poor distribution of livestock occurs in the riparian areas and other desirable areas where slopes are gentle, forage is abundant, and water is available. Livestock tend to remain in these areas until the palatable forage is depleted. In doing so, they also cause adverse impacts to the unpalatable vegetation by trampling it. This tends to remove the majority of the ground cover and results in increased erosion and degradation of the site. Reducing the number of livestock in a given area tends to reduce the grazing pressure in less desirable areas such as steep slopes and areas distant from water. However, grazing pressure remains relatively uniform within the desirable grazing areas. The lower number of livestock simply remain in the desirable grazing areas for a longer period of time and are not forced to utilize the less desirable areas. Table 3-2 identifies specific adverse and beneficial impacts that occur as result of the above-mentioned factors. These types of impacts are more prevalent on the allotments where seasonal grazing occurs and spring use is made every year. The rest rotation and deferred grazing plans are not as susceptible to these types of impacts because the grazing treatments tend to balance adverse and beneficial impacts and utilization is usually more uniform.

5. Range improvements - Construction of range improvements would temporarily remove about 76 acres from production and permanently remove approximately 10 acres. Average recovery time would be approximately five years.

In addition to range improvement construction, there would be 23,385 acres initially disturbed by vegatation manipulations (see Table 3-1).

The overall impact of brush beating 21,075 acres would be a change in species composition toward more grass and forbs for livestock, wild horses and wildlife. The long-term impact would be an increase in forage production from about 90 pounds per acre to 120 pounds per acre. Range condition of these acres would be expected to improve one condition class.

Plowing and seeding of desirable grass, forbs and browse species on 1,310 acres would have a short-term impact from production for not more than eight years. The long-term impact is expected to increase production from approximately 60 pounds per acre to 250 pounds per acre, with vegatative density increasing 100 percent. Range condition would be expected to change to good condition. Increases would be primarily livestock and wild horse forage.

Burning would have a short-term impact of removing vegetative cover the first spring season of the burning (1,000 acres). Long-term impact would be to change species composition toward more grass and forbs and an expected increase in forage production from approximately 120 pounds per acre to 140 pounds per acre. Range condition should change one class on the acreage receiving treatment.

Beneficial effects to vegetation can be obtained through implementation of sound grazing management. The following factors can have beneficial effects upon establishing and/or maintaining a desirable perennial vegetation:

1. Seed Trampling - When grazing occurs after desirable forage species have completed their annual growth cycles and produced seed, it has the effect of disseminating and planting the ripened seeds. When these areas are protected from grazing the following growing season, it allows the seeds to germinate and young plants to become established. In localized instances, grazing animals can have beneficial effects on vegetation by loosening the surface of hard, dry soils. In doing so, the surface is broken and any seeds lying on the surface are buried where they can germinate when spring moisture comes.

2. Several vegetation species are actually stimulated in vigor by moderate grazing. Some species react by reproducing a bushy growth form with increase volumes of photosynthetic tissue. This tends to produce increased volumes of succulent forage which is less rank and fiberous. Under these conditions the individual plants are able to maintain a high state of vigor.

The major beneficial impacts to vegetation as a result of the proposed action would be the increase in the acreage of good condition range and the reversal in a considerable amount of downward trend in condition. It is estimated that at the end of 15 years the amount of good condition range would go from 33,759 acres to 88,260 acres; fair condition range would go from 145,438 acres to

TABLE 3-1

EXPECTED ACREAGE DISTURBED BY PROPOSED IMPROVEMENTS

Range Improvements	Unit	Total	Acres Disturbed per Unit		Total Acres Disturbed	
			Short-term a/	Long-term b/	Short-term a/	Long-term b/
Fencing	Miles	54.1	1	.002	54.1	1
Water Developments						
Spring Developments	No.	51	.2	.2	10.2	10.2
Water Pipelines	Miles	44.5	.2	-	8.9	-
Water Troughs	No.	31	.1	-	3.1	-
Brush Beat	Acres	21,075	1	-	21,075	-
Plow and Seed	Acres	1,310	1	-	1,310	-
Burn	Acres	1,000	1	-	1,000	-
Total					23,461.3	11.2

a/ Short-term means 5 years from start of project.

b/ Long-term means at least 15 years or the term of the proposed action.

TABLE 3-2

IMPACTS TO VEGETATION AS A RESULT
OF PROPOSED GRAZING

Allotment	Vegetative Types Within Allotment	Elevational Range For Vegetative Type		Key Vegetative Species and Phenological Dates for Range Readiness		Proposed Season of Use for Livestock	Proposed Grazing Management (use periods, rest periods etc.)	Adverse Impacts	Beneficial Impacts
		(High)	(Low)	(above 6,000 ft.)	(below 6,000 ft.)				
Red Lake	Wyoming Big Sagebrush	8,100	5,200	AGSP 5/20 to 6/20	AGSP/SIHY 5/11 to 5/30	5/1 to 6/30	Seasonal grazing at a level 42 percent less than present grazing use.	Consistent spring use would tend to have the following impacts on the key grazing areas: 1. Decrease vegetative vigor. 2. Decrease seed production. 3. Decrease seedling establishment. 4. Decrease litter accumulation. Proposed turnout dates would be 2-3 weeks prior to phenological stage of range readiness of key forage species. Most of these impacts would occur on desirable grazing areas such as gentle slopes with water available.	Downward adjustment of 42 percent in grazing use would tend to: 1. Decrease total forage utilization within allotment. 2. Increase vegetative vigor. 3. Increase seed production. 4. Increase vegetative seedlings. 5. Increase litter accumulation. Most of these impacts would occur on less desirable grazing areas such as steep slopes with little water available.
	Shadscale Saltbush	6,200	5,200						
	Black Sagebrush	9,000	5,200						
	Douglas-Fir	9,700	5,200						
	Basin Big Sagebrush	6,100	6,000						
	Mountain Big Sagebrush	8,500	6,800						
	Threetip Sagebrush	7,900	5,300						
	Nuttall Tansy								
	Mountain Mahogany	9,100	6,600						
	Nuttall Saltbush								
	Rock								
Herd Creek	Mountain Big Sagebrush	9,900	6,100	AGSP 6/1 to 6/24	AGSP 5/17 to 10/31	6/16 to 10/31	Rest-Rotation-Three pasture at a level 19 percent greater than present use. Graze During Spring Rest Yearlong Graze After Seedripe	Upward adjustment of 19 percent would tend to accelerate following impacts: Vigor, reproduction and litter accumulation reduced. Litter accumulation decreased.	Vigor, reproduction and litter accumulation increased Vigor, reproduction and seed trample increased.
	Basin Big Sagebrush								
	Wyoming Big Sagebrush	7,800	5,600						
	Low Sagebrush	8,200	8,000						
	Threetip Sagebrush								
	Shadscale Saltbush								
	Nuttall Tansy								
	Wet Meadow	6,100	5,800						
	Douglas-Fir	9,300	6,000						
	Rock								
Spud Creek	Wyoming Big Sagebrush	8,000	5,500	AGSP 6/1 to 6/30	AGSP 5/11 to 5/31	5/1 to 6/30	Deferred-Two pasture at a level 16 percent less than present grazing use. Graze Until Seedripe (7/15) Defer Grazing Until After Seedripe	Vigor, reproduction and litter accumulation reduced Litter Accumulation Reduced The proposed turnout date would be 2-4 weeks prior to the phenological stage of range readiness.	Downward adjustment of 16 percent in grazing use would: 1. Decrease total forage utilization. 2. Increase vegetative vigor. 3. Increase seed production. 4. Increase vegetative seedlings. 5. Increase litter accumulation. Lighter stocking rate would tend to accelerate favorable vegetative response during spring rest treatment. The alternating spring rest treatment would partially negate the adverse impact treatment by the 2-4 week early turnout date.
	Douglas-Fir	8,500	5,400						
	Mountain Big Sagebrush								
	Threetip Sagebrush	7,700	5,700						
	Shadscale Saltbush								
	Riparian								
	Rock								
Road Creek	Basin Big Sagebrush	6,500	6,000	AGSP 6/1 to 6/24	AGSP 5/17 to 5/31	5/1 to 6/30	Seasonal grazing at a level 37 percent less than present grazing use.	Consistent spring use would tend to have the following impacts on key grazing areas: 1. Decrease vegetative vigor. 2. Decrease seed production. 3. Decrease seedling establishment. 4. Decrease litter accumulation. The proposed turnout date would be 3-4 weeks prior to phenological stage of range readiness of key species. Most of these impacts would occur on desirable grazing areas such as gentle slopes with water available	Downward adjustment of 37 percent in grazing use would tend to: 1. Decrease total forage utilization within the allotment. 2. Increase vegetative vigor. 3. Increase seedling establishment. 4. Increase litter accumulation. Most of these impacts would occur on less desirable grazing areas such as steep slopes with little water available.
	Wyoming Big Sagebrush	7,900	5,600						
	Nuttall Saltbush								
	Mountain Big Sagebrush	8,200	6,100						
	Low Sagebrush								
	Threetip Sagebrush	8,200	6,600						
	Wet Meadow	6,000	6,000						
	Douglas-Fir	8,100	6,900						
	Rock								
Bruno Creek	Douglas-Fir	8,900	5,900	FEID/AGSP 6/10 to 6/30	AGSP 5/17 to 6/8	5/16 to 9/30	Seasonal grazing at a level 33 percent less than present grazing use.	Consistent spring use would tend to have the following impacts on key grazing areas: 1. Decrease vegetative vigor. 2. Decrease seed production 3. Decrease seedling establishment. 4. Decrease litter accumulation. The proposed turnout date would be 2-3 weeks prior to phenological stage of range readiness of key species. Most of these impacts would occur on desirable grazing areas such as gentle slopes with water available.	Downward adjustment of 33 percent in grazing use would tend to: 1. Decrease total forage utilization within allotment. 2. Increase vegetative vigor. 3. Increase seed production. 4. Increase vegetative seedlings. 5. Increase litter accumulation. Most of these impacts would occur on less desirable grazing areas such as steep slopes with little water available.
	Wyoming Big Sagebrush	7,200	6,500						
	Mountain Big Sagebrush	8,900	6,500						
	Rock								
Round Valley	Basin Big Sagebrush			AGSP 5/17 to 6/8	SPCR 6/9 to 6/17	5/1 to 6/30	Seasonal grazing at a level 21 percent greater than present grazing use. Upper pasture would be used first every year.	Consistant spring use would tend to have the following impacts on key grazing areas: 1. Decrease vegetative vigor. 2. Decrease seed production. 3. Decrease seedling establishment. 4. Decrease litter accumulation. Proposed turnout date would be about one month prior to the phenological stage of range readiness of key species.	The proposed action would develope livestock water on about 2,800 acres presently determined to be unsuitable because of lack of water. This action would tend to make additional forage available and distribute livestock more uniformly throughout the allotment.
	Wyoming Big Sagebrush	6,200	5,200						
	Mountain Big Sagebrush								
	Threetip Sagebrush								
	Shadscale Saltbush	6,800	5,200						
	Nuttall Saltbush								
	Douglas-Fir	6,800	6,300						
	Rock								

TABLE 3-2 (Continued)

Allotment	Vegetative Types Within Allotment	Elevational Range For Vegetative Type (High)	(Low)	Key Vegetative Species and Phenological Dates for Range Readiness (above 6,000 ft.)	(below 6,000 ft.)	Proposed Season of Use for Livestock	Proposed Grazing Management (use periods, rest periods etc.)	Adverse Impacts	Beneficial Impacts
San Felipe	Black Sagebrush	8,200	5,900	FEID 6/1 to 6/19	AGSP 5/17 to 6/8	5/1 to 9/29	Rest-Rotation-Three pasture at a level 58 percent less than present grazing use. Graze During Spring Rest Yearlong Graze After Seedripe	Vigor, reproduction and litter accumulation reduced. Litter accumulation decreased. The proposed turnout date would be about 3-4 weeks prior to the phenological stage of range readiness of key species.	Downward adjustment of 58 percent in grazing use would: 1. Decrease total forage utilization within allotment. 2. Increase vegetative vigor. 3. Increase seed production. 4. Increase vegetative seedlings. 5. Increase litter accumulation. The lighter stocking rate would tend to accelerate favorable vegetative response during rest treatment. The rest treatment would help negate the adverse impact created by the 3-4 week early turnout date.
	Threetip Sagebrush	8,800	6,800						
	Mountain Big Sagebrush	9,200	6,200						
	Mountain Mahogany	8,400	6,700						
	Douglas-Fir	9,100	7,100						
	Wyoming Big Sagebrush	8,900	6,200						
	Wet Meadow	6,800							
	Nuttall Tansy	6,900	6,200						
	Shadscale Saltbush	6,600	6,000						
	Basin Big Sagebrush	6,200	6,100						
	Low Sagebrush	8,800	7,700						
	Nuttall Saltbush								
	Rock								
Warm Springs	Wyoming Big Sagebrush	8,000	5,500	AGSP 6/1 to 6/24	SPCR 6/9 to 6/17	5/1 to 12/15	Rest-Rotation-Five pasture a level 49 percent less than present grazing. Graze During Spring Rest Yearlong Graze After Seedripe	Vigor, reproduction and litter accumulation reduced Litter accumulation decreased The proposed turnout date would be 3-5 weeks prior to the phenological stage of range readiness of the key species.	Downward adjustment of 49 percent in grazing use would: 1. Decrease total forage utilization within the allotment. 2. Increase vegetative vigor. 3. Increase seed production. 4. Increase vegetative seedlings. 5. Increase litter accumulation. Lighter stocking rate would tend to accelerate favorable vegetative response during the rest treatment. The rest treatment would help negate the adverse impact created by the 3-5 week early turnout date.
	Big Sagebrush	6,400	5,600						
	Mountain Mahogany	9,100	6,600						
	Mountain Big Sagebrush	8,800	6,500						
	Threetip Sagebrush	8,600	5,400						
	Nuttall Saltbush								
	Shadscale Saltbush	7,100	5,100						
	Black Sagebrush	9,000	5,800						
	Low Sagebrush	8,400	7,300						
	Nuttall Tansy								
	Wet Meadow								
	Douglas-Fir	9,400	6,600						
	Rock								
Garden Creek	Wyoming Big Sagebrush	8,200	5,200	AGSP 6/1 to 6/24	AGSP 5/11 to 5/30	5/1 to 6/30	Rest-Rotation-Four pasture at a level 32 percent less than present grazing use. Graze During Spring season Rest Yearlong Graze After Seedripe	Vigor, reproduction and litter accumulation reduced. Litter accumulation reduced. The proposed turnout date would be 3-4 weeks prior to the phenological stage of range readiness of key species.	Downward adjustment of 32 percent for grazing use would tend to: 1. Decrease total forage utilization within allotment. 2. Increase vegetative vigor. 3. Increase seed production 4. Increase vegetative seedlings. 5. Increase litter accumulation. Lighter stocking rate would tend to accelerate favorable vegetative response during rest-treatment. The rest treatment would help negate the adverse impacts created by the 3-4 week early turnout date.
	Mountain Big Sagebrush	8,300	6,000						
	Threetip Sagebrush	8,000	5,800						
	Black Sagebrush								
	Shadscale Saltbush	6,700	5,200						
	Nuttall Tansy								
	Riparian Zones	6,000	5,200						
	Douglas-Fir	8,300	6,200						
Bald Mountain	Wyoming Big Sagebrush	9,400	5,200	AGSP 6/12 to 6/30	AGSP 5/17 to 5/31	5/1 to 6/30	Rest-Rotation-Three pasture at a level 52 percent less than present grazing use. Graze During Spring Rest Yearlong Graze After Seedripe	Vigor, reproduction and litter accumulation reduced. Litter accumulation reduced. The proposed turnout date would be 3-5 weeks prior to the phenological stage of range readiness of key species.	Downward adjustment of 52 percent in grazing use would tend to: 1. Decrease total forage utilization within allotment. 2. Increase vegetative vigor. 3. Increase seed production. 4. Increase vegetative seedlings. 5. Increase litter accumulation. Lighter stocking rate would tend to accelerate favorable vegetative response during the rest treatment. The rest treatment would help negate the adverse impacts created by the 3-5 week early turnout dates.
	Mountain Big Sagebrush	9,300	6,600						
	Threetip Sagebrush	8,800	5,400						
	Douglas-Fir	9,900	5,500						
	Black Sagebrush	8,200	6,000						
	Mountain Mahogany								
	Shadscale Saltbush								
	Riparian Zones	7,200	5,800						
Thompson Creek	Wyoming Big Sagebrush	6,900	5,600	AGSP/FEID 6/1 to 6/24	AGSP 5/17 to 5/31	5/16 to 10/15	Deferred Rotation-Three pasture at a level 60 percent less than present grazing use. Rotate Spring Rest-Two Pastures Use One Pasture After Seedripe Every Year	During spring use treatment vegetative vigor and reproduction would be reduced. Litter accumulation would be reduced during the spring and fall grazing periods. The proposed turnout date would be about 2 weeks prior to the phenological stage of range readiness of key species during some years.	Downward adjustment of 60 percent in grazing use would tend to: 1. Decrease total forage utilization within the allotment. 2. Increase vegetative vigor. 3. Increase seed production. 4. Increase vegetative seedlings. 5. Increase litter accumulation. Lighter stocking rate would tend to accelerate favorable vegetative response during spring rest treatment. The alternating spring rest treatment would partially negate the adverse impact created by the 2 week early turnout date.
	Mountain Big Sagebrush	8,800	5,600						
	Douglas Fir	8,400	5,600						
	Riparian Zones	6,500	6,400						

TABLE 3-2 (Continued)

Allotment	Vegetative Types Within Allotment	Elevational Range For Vegetative Type		Key Vegetative Species and Phenological Dates for Range Readiness		Proposed Season of Use for Livestock	Proposed Grazing Management (use periods, rest periods etc.)	Adverse Impacts	Beneficial Impacts
		(High)	(Low)	(above 6,000 ft.)	(below 6,000 ft.)				
Split Hoof	Wyoming Big Sagebrush	7,800	5,200	AGSP 6/1 to 6/24	AGSP 5/11 to 5/30	5/1 to 6/30	Seasonal grazing at a level 42 percent less than present grazing use.	Consistent spring use would tend to have the following impacts on key grazing areas: 1. Decrease vegetative vigor. 2. Decrease seed production. 3. Decrease seedling establishment. 4. Decrease litter accumulation. Most of these impacts would occur on desirable grazing areas such as gentle slopes with water available. The proposed turnout date would be about 2-4 weeks prior to the phenological stage of range readiness of key species during some years.	Downward adjustment of 42 percent in grazing use would tend to: 1. Decrease total forage utilization within allotment. 2. Increase vegetative vigor. 3. Increase seed production. 4. Increase vegetative seedlings. 5. Increase litter accumulation. Most of these impacts would occur on less desirable grazing areas such as steep slopes with little water available.
	Mountain Big Sagebrush	7,700	7,600						
	Black Sagebrush								
	Threetip Sagebrush								
	Shadscale Saltbush								
	Nuttall Tansy								
	Riparian Zones								
	Rock								
Squaw Creek	Wyoming Big Sagebrush	8,500	5,600	AGSP/FEID 6/7 to 6/30	AGSP 5/11 to 5/31	5/1 to 6/30	Deferred-Two pasture at a level 70 percent less than present grazing use. Graze Season Long Rest Until After Seedripe	During season long grazing treatment, vegetative vigor and reproduction would be reduced. Litter accumulation would be reduced during the spring and fall grazing periods. The proposed turnout date would be 2-4 weeks prior to the phenological stage of range readiness of key species.	Downward adjustment of 70 percent in grazing use would: 1. Decrease total forage utilization. 2. Increase vegetative vigor. 3. Increase seed production. 4. Increase vegetative seedlings. 5. Increase litter accumulation. Lighter stocking rate would tend to accelerate favorable vegetative response during spring rest treatment. The alternating spring rest treatment would partially negate the adverse impacts created by the 2-4 week early turnout date.
	Mountain Big Sagebrush	8,800	6,100						
	Low Sagebrush								
	Riparian Zones								
	Douglas-Fir	9,300	5,700						
	Rock								
Pine Creek	Wyoming Big Sagebrush	6,900	5,600	AGSP 6/1 to 6/24	AGSP 5/17 to 5/31	5/16 to 6/30 10/1 to 10/16	Seasonal grazing use at a level 1 percent greater than present grazing use.	Consistent spring use would tend to have the following impacts on key grazing areas: 1. Decrease vegetative vigor. 2. Decrease seed production. 3. Decrease seedling establishment. 4. Decrease litter accumulation. The proposed turnout date would be about 2 weeks prior to the phenological stage of range readiness.	The proposed action would realign the allotment boundary and make additional forage available. This accounts for the proposed 1 percent increase in grazing.
	Mountain Big Sagebrush	8,100	6,000						
	Low Sagebrush								
	Threetip Sagebrush								
	Nuttall Tansy								
	Douglas-Fir								
	Rock								
East Fork	Wyoming Big Sagebrush	8,000	5,800	AGSP/FEID 6/1 to 6/30	AGSP 5/17 to 5/31	5/1 to 6/30	Rest-Rotation-Three pasture at a level 61 percent less than present grazing use. Graze Spring Season Rest Yearlong Graze After Seedripe	Vigor, reproduction and litter accumulation reduced. Litter accumulation reduced. The proposed turnout date would be 2-4 weeks prior to the phenological stage of range readiness of key species.	Downward adjustment of 61 percent in grazing use would tend to: 1. Decrease total forage utilization within the allotment. 2. Increase vegetative vigor. 3. Increase seed production. 4. Increase vegetative seedlings. 5. Increase litter accumulation. Lighter stocking rate would tend to accelerate favorable vegetative response during spring rest treatment. The rest treatment would partially negate the adverse impacts created by the 2-4 week early turnout date.
	Mountain Big Sagebrush	8,400	6,000						
	Douglas-Fir	8,300	6,200						
	Low Sagebrush								
	Threetip Sagebrush								
	Shadscale Saltbush								
	Riparian Zones								
Sullivan Creek	Mountain Big Sagebrush	8,000	5,500	AGSP/FEID 6/1 to 6/30	AGSP 5/11 to 5/31	5/1 to 6/30	Seasonal grazing use at a level 5 percent greater than present use.	Consistent spring use would tend to have the following impacts on key grazing areas: 1. Decrease vegetative vigor. 2. Decrease seed production. 3. Decrease seedling establishment. 4. Decrease litter accumulation. The proposed turnout date would be 2-4 weeks prior to the phenological stage of range readiness for key species.	
	Douglas-Fir	8,100	5,500						
	Wyoming Big Sagebrush								
	Riparian								
Malm Gulch	Wyoming Big Sagebrush	8,100	5,200	No Grazing			No grazing by livestock or wild horses.		Removal of 24 head of wild horses will have the following effects: 1. Increase vegetative vigor. 2. Increase seed production. 3. Increase seedling establishment. 4. Increase litter accumulation.
	Basin Big Sagebrush	6,100	5,900						
	Black Sagebrush	7,200	6,100						
	Mountain Mahogany	8,100	6,700						
	Douglas-Fir	8,300	6,100						

TABLE 3-3

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE PROPOSED ACTION

Allotment	Current AUMs Available For Livestock	Future AUMs Available For Livestock
Red Lake	613	1,149
Herd Creek	1,411	1,411
Road Creek	346	655
Bruno Creek	85	148
Round Valley	438	549
San Felipe	3,484	5,804
Warm Springs	2,201	4,504
Garden Creek	600	996
Bald Mountain	296	403
Thompson Creek	51	54
Split Hoof	118	251
Squaw Creek	133	287
Spud Creek	202	304
Pine Creek	181	317
East Fork	192	331
Sullivan Creek	85	206
Malm Gulch	0	0
Total	10,436	17,369

117,786 acres; and poor condition range would go from 103,565 acres to 76,716 acres. For specific projections regarding vegetative condition by allotment see Table 3-4.

Trend in condition would also be improved as a result of the proposed action. The present 12,790 acres in upward trend would be increased to 94,144 acres at the end of 15 years, present downward trend of 72,977 acres would be decreased to 570 acress and present static trend on 196,995 acres would be reduced to 188,618 acres (see Table 3-5).

Soil

Sediment Yield. Improved vegetation cover would change sediment yield under the proposed action from an average of 1.32 ton per acre to 0.87 tons per acre. In total tons this would be a reduction of 149,000 tons for the Challis Unit (see Table 3-7). Short-term sediment yield could increase to 1.45 tons per acre annually on the 1,310 acres proposed for plowing, if heavy rains occurred before vegetative cover was restored. On the area proposed for burning, there would be a potential for two tons per acre sediment yield on 1,000 acres until stabilization.

Wildlife

Beneficial and adverse impacts to native fauna are presented in two parts, terrestrial and aquatic. General impacts affecting all species are discussed first, followed by animal specific or group specific impacts. A summary of significant impacts to terrestrial and aquatic wildlife resulting from the proposed action can be found in Tables 3-8 and 3-9.

Terrestrial.

Introduction. Adverse or negative impacts to terrestrial wildlife are defined as any environmental change which reduces population size below the existing carrying capacity of the environment, increases population size above carrying capacity, or reduces existing carrying capacity. Similarly, a beneficial or positive impact may be defined as environmental change which restores depleted or oversized populations to carrying capacity or increases carrying capacity for the species being considered (Thompson, 1977). Causes of adverse and beneficial impacts can be grouped into four main catagories: 1) habitat alteration; 2) animal displacement; 3) changes in birth and death rates; and 4) stress to animals. Either singlely or in combination, they affect the carrying capacity and/or population. Figure 3-1 illustrates this cause and effect relationship. The following discussion pertaining to impacts to wildlife will follow the above rationale.

General Impacts. The most common cause/effect impact relationship relating to all wildlife in the Challis ES Area is the subtle

TABLE 3-4

PRESENT VEGETATION CONDITION AND FUTURE CONDITION AFTER 15 YEARS UNDER PROPOSED ACTION (Acres)

	Good		Fair		Poor		Douglas Fir	Rock	Burn
Allotment	Present	Future	Present	Future	Present	Future	Present & Future	Present & Future	Present
Red Lake	2,186	7,111	9,217	6,163	8,251	6,380	1,709	1,832	-
Herd Creek	8,292	10,766	6,637	5,584	2,138	717	2,240	2,743	-
Road Creek	1,800	3,869	9,430	7,431	2,250	2,180	101	1,984	-
Bruno Creek	494	683	537	414	76	10	1,201	70	-
Round Valley	6,010	8,299	3,978	1,689	2,596	2,596	8	911	-
San Felipe	3,370	16,871	32,272	28,775	39,267	29,263	4,314	2,093	-
Warm Springs	5,063	22,769	36,513	27,419	15,839	7,227	628	1,660	-
Garden Creek	699	5,026	16,726	13,087	8,988	8,300	1,907	2,138	-
Bald Mountain	327	852	5,977	5,994	7,507	6,965	4,640	3,888	189
Thompson Creek	276	381	2,119	2,069	785	730	1,440	975	-
Split Hoof	-	1,495	5,153	3,764	2,759	2,653	-	503	-
Squaw Creek	760	996	1,036	1,853	2,651	1,598	931	1,671	-
Spud Creek	307	1,488	3,568	2,410	2,797	2,774	841	1,343	-
Pine Creek	-	992	3,903	2,911	559	559	205	359	-
East Fork	61	887	4,861	4,828	4,384	3,591	927	1,486	-
Sullivan Creek	4	645	1,383	923	512	331	1,330	341	-
Malm Gulch	4,166	5,130	2,130	2,532	2,208	842	70	622	-
Totals	33,815	88,260	145,440	117,846	103,567	76,716	22,492	24,619	189

TABLE 3-5

PRESENT APPARENT TREND AND TREND AFTER 15 YEARS UNDER PROPOSED ACTION (Acres)

Allotment	Up		Down		Static		Douglas Fir, Burn and Rock	Total
	Present	Future	Present	Future	Present	Future		
Red Lake	-0-	6,797	3,630	-0-	16,024	12,857	3,541	23,195
Herd Creek	-0-	-0-	570	570	16,497	16,497	4,983	22,050
Road Creek	-0-	2,140	4,789	-0-	8,691	11,340	2,085	15,565
Bruno Creek	-0-	255	-0-	-0-	1,107	852	1,271	2,378
Round Valley	-0-	2,289	-0-	-0-	12,614	10,296	919	13,503
San Felipe	3,960	27,468	24,500	-0-	46,449	47,440	6,407	81,316
Warm Springs	-0-	26,318	23,450	-0-	33,965	31,097	2,288	59,703
Garden Creek	-0-	5,013	6,970	-0-	19,443	21,400	4,045	30,458
Bald Mountain	3,670	4,737	2,630	-0-	7,511	9,074	8,726	22,597
Thompson Creek	2,020	2,181	520	-0-	640	999	2,415	5,595
Split Hoof	-0-	1,600	2,600	-0-	5,312	6,312	503	8,415
Squaw Creek	-0-	1,290	650	-0-	3,797	3,157	2,597	7,044
Spud Creek	620	1,823	-0-	-0-	6,052	4,849	2,184	8,856
Pine Creek	-0-	992	-0-	-0-	4,462	3,470	564	5,026
East Fork	2,520	4,138	-0-	-0-	6,786	5,168	2,404	11,715
Sullivan Creek	-0-	822	1,648	-0-	250	1,076	1,672	3,570
Malm Gulch	-0-	2,385	1,020	-0-	7,425	6,060	691	9,136
Totals	12,790	94,144	72,977	570	197,055	188,107	47,300	330,122

TABLE 3-6

ESTIMATED SEDIMENT YIELD BY VEGETATION TYPE UNDER THE PROPOSED ACTION

Vegetative Type	Sediment Yield Tons/Acre
Basin Big Sagebrush (ARTRT)	1.05
Wyoming Big Sagebrush (ARTRW)	1.05
Mountain Big Sagebrush (ARTRV)	.95
Gray Low Sagebrush (ARARA)	1.02
Black Sagebrush (ARARN)	.85
Three-tip Sagebrush (ARTR4)	.96
Mountain Mahogany (CELE 3)	1.13
Shadscale (ATCO)	.82
Nuttall Saltbush (ATNU)	1.86
Nuttall Tansy (Half-shrub)	.89
Semi-wet Meadow	.67
Semi-wet Stream Bottom	.88
Douglas Fir (PSME)	.47

TABLE 3- 7

Estimated Annual Sediment Yield After 15 Years As A Result Of The Proposed Action

Allotment	Acres	Total Sediment (Tons)	Average Tons/Acre
Red Lake	23,195	15,502	.67
Herd Creek	22,050	16,633	.75
Road Creek	15,565	12,637	.81
Bruno Creek	2,378	1,332	.56
Round Valley	13,503	8,773	.65
San Felipe	81,316	85,049	1.05
Warm Springs	59,703	48,347	.81
Garden Creek	30,458	26,875	.88
Bald Mountain	22,597	21,191	.94
Thompson Creek	5,595	5,014	.90
Split Hoof	8,415	8,130	.97
Squaw Creek	7,044	5,214	.74
Spud Creek	8,856	7,979	.90
Pine Creek	5,026	4,701	.94
East Fork	11,715	12,739	1.09
Sullivan Creek	3,570	2,521	.71
Malm Gulch	9,136	5,450	.60
Totals	330,122	288,087	.87

disappearance and replacement of wildlife species as vegetation composition and structure are changed or altered. As the plant communities change vegetation composition and structural stages, the wildlife using them also change. In order to identify the displacement (and/or removal) and replacement of wildlife species effected by the separate entities of the proposed action refer to Appendices 3-A, 3-B, 3-C, 3-D and instructions, Appendix 3-E. The degree of impacts from habitat alteration to individual species is dependent upon: 1) the tolerance of the species to the stresses imposed from habitat alteration; 2) the effects of habitat alteration on birth and death rates; 3) the degree of vegetation disturbance; and 4) availability of adjacent habitats and vacant niches in them. Displacement (or removal) and replacement of wildlife is not expected to be a widespread impact to single wildlife species or groups of species in the Challis Unit as a whole, but it will occur on a site specific basis throughout the ES Area as a result of the proposed action. It would occur in pastures and allotments that would have ecological condition classes advanced or retarded as a result of the proposed action and it would occur with vegetation manipulation practices. Appendices 3-A, 3-B and 3-C also indicate, by species, which life requirements (food, water, cover) of each species would be impacted as a result of removal or disturbance of vegetation and/or the presence of livestock.

The allocation of forage would benefit several terrestrial wildlife species as it would reduce the amount of forage consumed by wild horses and livestock in all allotments except Herd Creek, Round Valley, Pine Creek and Sullivan Creek. These allotments are expected to receive the same or additional livestock use. The proposed action has the potential for providing additional forage for all big game, rodents, insects and seed-eating birds (Appendices 3-B and 3-C). Quantity and quality of improved animal habitat would depend on the ability of individual plant communities to respond to the reduction in grazing by cattle and horses and other proposed grazing management programs. Improved habitat would decrease stress to all species dependent on terrestrial vegetation for food and cover which in turn would reduce displacement and mortality. Birth rates would be expected to be enhanced, increasing populations and/or species diversity.

Allotments on which grazing systems are proposed would have both adverse and beneficial impacts to terrestrial wildlife. Allotments that propose grazing systems which would provide seasonal or annual rest (Table 1-6) would, on a short-term basis, in the rest or deferred pastures, benefit wildlife species through improved habitat quality and quantity. These pastures would provide non-competition forage for big game, rodents and insects (Appendix 3-C). Additional cover will be provided for rodents and ground nesting birds (Appendices 3-B and 3-C). The nonuse pastures would also provide areas where wildlife species would not have to interact physically (nest trampling, etc.), competitively (forage), and socially with livestock. Therefore, deferred or rested pastures, on a short-term basis, would be expected to 1) increase habitat condition; 2) increase carrying capacities; 3) decrease stress; 4) decrease displacement; and 5) decrease mortality and enhance birth rates of those species associated with the vegetation type where the system occurs. Increased population levels would be expected to increase for species with shorter reproduction cycles (mice, rabbits, insects, etc.)

Allotments presently in fair and good condition and in higher rainfall zones would be expected to advance an ecological condition class. This would enhance the beneficial impacts to terrestrial wildlife from increased forage and cover associated with the rest pastures, on a long-term basis. However, it is doubtful that the proposed rest rotation systems, and possibly the deferred systems (less than 20 percent of the area), would significantly advance an ecological condition class within 15 years in those areas presently in poor condition, having less than 13 inches of rainfall, and continued turnout dates prior to the proper phenological development of the plants. Grazing systems meeting this criteria would be expected to produce the short-term beneficial impacts caused by increased forage and cover in the rest or deferred pastures, but not significant increases in ecological condition on a long-term basis. Clark and Ward (1976) concluded that perennial grasses responded inconsistently to alternate year seasonal rest and they suggest that alternate year rest schedules do not provide enough growing season recovery time between grazing seasons. Mueggler (1975) found that Idaho fescue requires about three years protection to regain full vigor and if in a state of low vigor will take five years of protection and then only produces two-thirds as much herbage and flower stalks. He also found that bluebunch wheatgrass of moderately low vigor may require at least six years of protection to recover full vigor.

Allotments and pastures having turnout dates during May would create wildlife-livestock interactions during one of the most crucial times for a majority of the wildlife species: reproduction (late fetal development, birth, rearing of new born and lactation). Ground nesting birds, birds nesting in low shrubs, strutting and nesting sage grouse, and small mammals are a few of the species and groups of species that would be impacted (Buttery, et. al., 1975). Animals recovering from winter stress conditions will also be benefited. Adverse impacts during this early spring period are caused mainly by removal and/or disturbance of vegetation and trampling of fauna. Effects to impacted species are increased stress, displacement (short- and long-term), increased deaths, decreased survival of newborn, and increased habitat alteration, all of which could decrease carrying capacities and populations.

Proposed range improvements would have beneficial and adverse impacts on wildlife. Water developments would enhance most species habitat where water is presently lacking, especially during summer months. Leaving water systems functioning, after livestock are removed from the use pastures and allotments, would provide additional water for wildlife. Water developments and springs that are fenced would provide excellent habitat for birds and small mammals (refer to Appendices 3-B and 3-C for animals associated with wet meadows and riparian zones). These areas would provide a non-competitive (from livestock and horses) source of food as well as good hiding, resting, and nesting cover. It also could provide a good area of prey for hunting predators and raptors. The following beneficial impacts could occur: increased habitat quality and quantity, increase carrying capacity of immediate and adjacent habitat, reduce stress to most animals using the area, reduce displacement, lower water based mortality and potentially provide increased populations and wildlife diversity. The opposite impacts would occur on small areas around watering areas where livestock and horses habitually congregate for water.

Prescribed burns, reseeding and brush beating projects would have site specific impacts to localized populations of wildlife, especially small mammals, reptiles and birds having small home ranges. Wildlife species associated with the new vegetation composition and structure would be gained and those dependent upon the removed vegetation would be lost. For example, birds associated with low brush for resting and nesting (Appendix 3-B) would be displaced during a browse beating project and those species associated with increased grasses and other ground cover for foraging, nesting, and resting (Appendix 3-B) would become part of the new micro-environment. Appendix 3 describes how to predict which species would be adversely and beneficially impacted.

The proposed action is not expected to change the congregation of livestock and wild horse use in riparian zones and the deterioration of riparian vegetation. Consequently, no change in impacts would occur to the 160-170 wildlife species dependent upon the life requirements (food, water, cover) associated with riparian vegetation. Irrevocable consumption of this important wildlife habitat will continue to cause stress, displacement, habitat alteration, increased death rates and decreased birth rates, and reduced carrying capacities, all of which will continue to lower potential wildlife species diversity and populations. Those species affected are listed in Appendices 3-A, 3-B and 3-C, by associating species needing wet meadows or riparian zones for reproduction or feeding.

Species Specific Impacts.

Big Game. The Challis ES Area is rather unique in that it has four major big game species and livestock grazing within its boundaries, but the two seldom interact. This is because a large percentage of the ES Area is characterized by steep slopes not normally used by cattle, areas without water, areas of little big game use during times when livestock are on the range, and the fact that antelope are the only big game species regularly concentrating in areas used by livestock. These factors eliminate much of the magnitude of big game/livestock conflicts, such as dual foraging areas, social interaction, competition for early spring green-up and over use of winter ranges, normal to other areas in the intermountain region. The proposed action, through suitability classification, Appendix 2-C, reduction of livestock, and elimination or drastic reduction of livestock on bighorn sheep areas has further reduced the adverse impact to big game normally associated with livestock. However, a few impacts still remain to be discussed.

Deer. Although the majority of deer use can be found on slopes not used by cattle, there is some spring movement onto the lower slopes and bottomlands during mid-spring when the grasses begin to green-up. Some early competition for forage with cattle would continue to occur for a short time in all allotments where turnout dates would be prior to June 1, except Thompson Creek, Round Valley, Sullivan Creek and Warm Springs Allotments. Reduction of livestock and wild horse numbers and allocation of forage will greatly reduce spring competition by providing additional forage. Young nutritious growth would be more available to pregnant and lactating does and those deer recovering from winter stresses. All factors considered, bottomland and lower slopes habitat used by deer in the spring would be expected to improve through reductions of livestock and wild horses and forage allocation; decreasing stress, displacement and mortality. It would also improve carrying capacity and increase potential birth rates.

Some wild horse/deer interaction presently occurs, especially between the mouth of Road Creek and Germer Basin. However, reduction of wild horses would reduce social interaction and provide additional habitat and forage if needed in the future.

Controlled burning in the East Fork Allotment will reduce high elevation winter habitat for deer by eliminating 1,000 acres of browse. This would lower the winter carrying capacity, increase stress to wintering deer and cause some displacement. However, it will increase spring forage with succulent green-up. The burn area is a small part of the total winter range and is not expected to significantly affect population levels or future IDF&G deer management goals in that particular area.

Fences constructed on deer migration routes in Squaw Creek, Split Hoof and San Felipe Allotments would cause some mortality until deer become accustomed to them. This is especially true for young animals unaccustomed to negotiating fences and animals in poor condition due to winter stress. Mortality and stresses from fences would be expected to decrease quickly and not be a significant long-term impact.

Brush beating treatments would decrease shrub composition on deer winter range in the Bald Mountain Allotment. However, the treatment would be beneficial to deer since the present sagebrush stands, especially in the Centennial Flat area are composed of many unuseable decadent plants. Brush beating would be phased over a 12 year period to maintain winter carrying capacities for deer during the project. It would encourage sprouting and regrowth of sagebrush which is more palatable to deer. This would have significant beneficial impacts on pregnant and lactating does. There are plenty of other adjacent shrub areas for deer to disperse to during the project period. Brush beating projects would inhance deer spring habitat, reduce stress to pregnant does and animals recovering from winter, displace deer for a short time and then discourage further displacement and consequently increase carrying capacity and the potential for higher populations.

Potential land development near the East Fork Allotment, as discussed in the economics impact section, would have serious impacts on the deer that use this area. Private hay meadows presently used along the East Fork are important for spring deer use. Loss of these areas from housing developments and human associated harassment would decrease habitat and carrying capacity. Stress conditions, displacement, mortality and decreased birth rates could be expected, decreasing present populations.

The combination of beneficial and adverse impacts resulting from the proposed action is not expected to have beneficial or adverse impacts to present population levels or IDF&G 15 year goals. However, it would provide improved habitat condition in about 15 years for deer, thus increasing potential for maintenance of desired herd levels and for increased deer populations in the future if the IDF&G so desire.

Elk. All the allotments where elk occur, except San Felipe, are used during winter and spring on a sporadic basis depending upon climatic conditions which force wintering populations on and off the area. Therefore, the impacts in these use areas would be sporadic. These areas are "fringeareas" of traditional spring and winter ranges. Impacts resulting from livestock grazing, early turnout, forage allocation and reduction of livestock would be similar to those discussed under general impacts and deer impacts. The proposed action would not affect present population levels or future population goals. However, increasing habitat conditions would be enhanced, increasing the potential for long-term maintenance of desired populations and future populations if desired by the IDF&G.

In the San Felipe Allotment the eastern, southeastern and southern boundaries are part of the elk migration route and receive some dual use by cattle and elk during the spring. The proposed decrease in stocking rates and implementation of grazing systems would have the following impacts in the use pasture: 1) Decreased competition for early spring forage in the use pastures would decrease stress to pregnant and lactating cows, decreasing the chance of mortality to fetuses and young. 2) Elk would be displaced when livestock use pastures occurring in the migration area.

Several studies have shown elk avoid areas used by livestock (Skovlin, et. al., 1968; Knowles, 1975; Komberic, 1976; Mackie, 1970) because of the social intolerance of the two species. This factor would force elk to areas not normally used or accelerate migration through the allotment. Beneficial impacts would occur when the pasture is rested. Elk would be free of social interaction and stress contributed to interactions.

Not developing water in the San Felipe Allotment in the traditional wintering area would continue to leave the area uninfluenced by livestock, eliminating potential adverse impacts.

The proposed BLM/Idaho Highway Department fence along Highway 93 on Willow Creek Summit would disect an elk migration route and crucial area. Mortality and harassment is expected since elk would be forced to negotiate a fence and at the same time dodge traffic. This would complicate normal crossing and escape activities. The proposed fence would impose stress to pregnant cows, young animals, and winter-stressed animals. Fence crossing impacts will be compounded when deep snows occur during winter months. Quality of habitat would be lessened.

The proposed action, as it relates to livestock, would not have any affect on the present elk populations in the Challis Unit nor would it adversely affect the IDF&G 15 year goals. However, the proposed action would expect to improve potential habitat conditions. Future population maintenance and increases, if desired, may be possible.

Wild horse reductions could potentially expand elk use areas in the adjacent lower elevations of the San Felipe Allotment. Horse reductions would reduce social interaction and improve habitat condition.

Antelope. Antelope in the ES Area would primarily benefit from the proposed actions. Allocations of forage and reduction of livestock numbers will improve habitat condition on areas used during spring months. Continued grazing by livestock will help to maintain sagebrush and tanacetum communities. Reduction of competition for succulent green grasses and forbs would occur where antelope and cattle interact in the spring. This would decrease stress to pregnant and lactating does and newborn fawns. Carrying capacities on these areas, at least for spring use, would be improved.

Reduction of wild horse numbers would reduce forage competition, social interaction, and, in general, improve quantity and quality of antelope habitat. Stress and displacement from social interaction would be reduced. Carrying capacities for antelope would increase.

Water developments would enhance summer antelope habitat by encouraging use in areas presently unavailable due to lack of water. Three water developments are proposed very near crucial winter use areas. These occur in the San Felipe and Warm Springs Allotments and could encourage more antelope to use part of their winter range during the summer. This would decrease carrying capacities on those crucial winter ranges, thus, reducing available forage, imposing stress to wintering animals, potentially increasing mortality and decreased birth rates and lowering the carrying capacity.

Brush beating practices would decrease decadent stands of sagebrush. An increase in young sprouting sagebrush, succulent grasses and forbs would be expected while still maintaining good shrub composition. This beneficial habitat alteration will result in decreased stress accompanied with insufficient forage, thus increasing the carrying capacity.

Potential land developments, as discussed in the economic impacts, and associated human harassment would eliminate the antelope herd from the area in the Spud Creek Allotment. Development would adversely alter crucial habitat by imposing undue stress to wintering antelope through human associated activities causing displacement, increased mortality and decreased birth rates, and possibly the elimination of 140 antelope.

Fences in the San Felipe and Warm Springs Allotment, even though built to Bureau specifications, would cause some mortality during the initial adjustment period. This would be especially true to young animals who are not familiar with negotiating fences.

With the exception of potential subdivisions in Spud Creek, the proposed action is not expected to have significant impacts, beneficial or adverse, to existing populations or projected goals of the IDFG. It could, however, help maintain the 15 year goals and increase potential for larger numbers of antelope in the future if the IDF&G so desires.

Bighorn Sheep. Elimination of livestock on all crucial bighorn sheep areas would benefit bighorn herds by eliminating social interation and foraging competition. This would eliminate stress and displacement during crucial periods associated with livestock. Carrying capacity of the bighorn crucial range should increase. Any mortality related to past social conflicts and forage competition would be eliminated.

Few significant livestock associated impacts would be expected on the noncrucial bighorn winter and spring ranges. Recent research and observations indicate that social impacts and foraging competition will be minimized, especially in the Ziegler Basin Area where conflicts were originally thought to be more severe. Cattle use is normally exclusive from bighorn use areas due to steep terrain and poor availability of accessable water. Areas where livestock and bighorn occasionally interact on spring ranges would produce the same adverse impacts discussed in the general wildlife, deer and elk sections related to competition for forage and social interaction. Overall, the proposed action would benefit bighorn habitat by increasing carrying capacities and increasing potential for population increases. Livestock conflicts would be minimized and the IDF&G would be able to meet present and future population projections, as well as maintenance, with the existing herds on the allotments presently containing bighorn sheep.

Proposed burning in the East Fork Allotment would benefit bighorn sheep. Shrub composition would be reduced and native grasses and forbs would increase providing additional forage. Carrying capacity would increase with increased quality and quantity.

The most detrimental impact to bighorn sheep in the East Fork Area could result from a secondary impact of the proposed action. If marginal livestock operators are forced to sell their land to land development organizations (see impacts, Socio-Economics), the bighorn sheep population in the East Fork could be eliminated. Howe (1973) and Hoover (personal correspondence) have studied the results of human habitation in Colorado near bighorn sheep ranges and indicated domestic dogs and other human harassment would have severe impacts to the bighorn herd on the East Fork. Human harassment would affect the viability of the herd, due to stress, and lower lamb survival. Development of lands would adversly affect IDFG's present and future population objectives.

With the exception of the secondary impacts caused by potential land development in the East Fork, the proposed action is not expected to have any adverse impacts on bighorn sheep populations or the objectives of the IDF&G to manage for them presently or in the future. The beneficial impacts discussed would enhance bighorn habitat and help IDFG maintain desired populations.

Gamebirds.

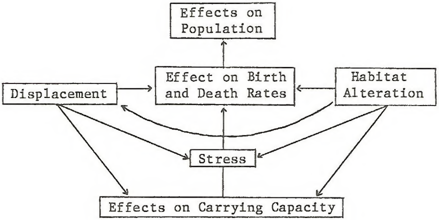
Sage Grouse. Reduction in livestock numbers and wild horses would potentially increase succulent forbs and grass shoots during spring and summer. However, competition for forage would still exist. Reduction of livestock and wild horses would also reduce the probability of destruction to nests and birds from trampling. However, some trampling would continue. Grazing systems providing rest or deferred pastures, especially during spring would allow an undisturbed period for nesting and brood rearing in the unused pastures.

Brush beating practices as proposed would benefit sage grouse habitat by reducing portions of heavy density decadent stands of sagebrush and increasing grass forb composition and improving sagebrush age structure. This would benefit foraging bird and young, especially during spring and summer. Stresses from lack of good forage would be reduced. Carrying capacity would be increased. The possibility for increased populations will be enhanced.

Blue Grouse. Livestock and horse use of riparian zones and wet meadows would continue. This important part of the blue grouse habitat would continue to be abused due to the nature of cattle and wild horses staying in the riparian zone for shade and water. Brood rearing and nesting would continue to be impacted due to lack of cover and succulent forage. Population would be expected to stay at present levels, much below the potential.

FIGURE 3-1

MAJOR TYPE OF IMPACTS TO WILDLIFE
AND THEIR EFFECT ON CARRYING CAPACITY
(Thompson, 1977)



Aquatic

Implementation of the proposed action would result in an insignificant increase in anadromous fish production in the Challis Planning Unit. Fish habitat in most streams in the unit would improve slightly when livestock and wild horse use is reduced and grazing systems are implemented (Table 3-10). However, it must be realized that significant impacts to the anadromous fish and fish habitat resulting from management of adjacent lands over which BLM has no control would continue.

TABLE 3- 8

A SUMMARY OF IMPACTS TO TERRESTRIAL WILDLIFE AS A RESULT OF THE PROPOSED ACTION a/

	Habitat Alteration	Stress	Displacement	Carrying Capacity	Mortality	Birth Rate	Present Population	IDFG 15-year Goal b/	Maintenance of 15-year Goal
Allocation of Forage									
Non-game	+d	+d	+d	+i	+d	+i	+i	–	–
Deer	+d	+d	+d	+i	+d	+i	0	0	+i
Elk	+d	+d	+d	+i	+d	+i	0	0	+i
Antelope	+d	+d	+d	+i	+d	+i	+i	0	+i
Bighorn Sheep	+d	+d	+d	+i	+d	+i	0	+i	+i
Upland Game Birds	+d	+d	+d	+i	+d	+i	0	0	0
Turn Out Dates									
Non-game	-*	-*	-*	-*	-*	-*	-*	–	–
Deer	-*	-*	-*	-*	-*	-*	0	0	0
Elk	-*	-*	-*	-*	-*	-*	0	0	-d
Antelope	-*	-*	-*	-*	-*	-*	0	0	-d
Bighorn Sheep	-*	-*	-*	-*	-*	-*	0	0	-d
Upland Game Birds	-*	-*	-*	-*	-*	-*	0	0	0
Grazing Systems Rest/ Use Pastures									
Non-game	+d/-i*	+d/-i*	+d/-i*	+i/-d*	+d/-i*	+i/-d*	+i/-*	–	–
Deer	+d/-i*	+d/-i*	+d/-i*	+i/-d*	+d/-i*	+i/-d*	0/-*	0/0*	0/-d
Elk	+d/-i*	+d/-i*	+d/-i*	+i/-d*	+d/-i*	+i/-d*	0/-*	0/0	+i/+i
Antelope	+d/0	+d/0	+d/0	+i/0	+d/0	+i/0	0/0	+i/0	+i/+i
Bighorn Sheep	+d	+d	+d	+i	+d	+i	0	+i	+i
Upland Game Birds	+d/-*	+d/-*	+d/-*	+i/-*	+d/-*	+i/-*	0	+i/+i	+i/+i
Ecological Condition Changes									
Non-game	+d	+d	+d	+i	+d	+i	0	–	–
Deer	+d	+d	+d	+i	+d	+i	0	0	+i
Elk	+d	+d	+d	+i	+d	+i	0	0	+i
Antelope	+d	+d	+d	+i	+d	+i	0	+i	+i
Bighorn Sheep	+d	+d	+d	+i	+d	+i	0	0	+i
Upland Game Birds	+d	+d	+d	+i	+d	+i	0	0	+i
Social Interaction (reduction of cows and horses)									
Non-game	0	-d*	+d*	+i	+d	+i	0	–	–
Deer	0	-d*	+d*	+i	+d	+i	0	0	+i
Elk	0	-d*	+d*	+i	+d	+i	0	0	+i
Antelope	0	-d*	+d*	+i	+d	+i	0	0	+i
Bighorn Sheep.	0	-d*	+d*	+i	+d	+i	0	0	+i
Upland Game Birds	0	-d*	+d*	+i	+d	+i	0	0	+i

TABLE 3-8

A SUMMARY OF IMPACTS TO TERRESTRIAL WILDLIFE AS A RESULT OF THE PROPOSED ACTION a/

(cont.)

	Habitat Alteration	Stress	Displacement	Carrying Capacity	Mortality	Birth Rate	Present Population	IDFG 15- b/ year Goal	Maintenance of 15-year Goal
Use of Riparian Zones (cows and horses)									
Non-game	-i*	-i*	-i*	-d*	-i*	-d*	0	-	-
Deer	-i*	-i*	-i*	-d*	-i*	-d*	0	0	-d
Elk	-i*	-i*	-i*	-d*	-i*	-d*	0	0	-d
Antelope	-i*	-i*	-i*	-d*	-i*	-d*	0	0	-d
Bighorn Sheep	-i*	-i*	-i*	-d*	-i*	-d*	0	0	-d
Upland Game Birds	-i*	-i*	-i*	-d*	-i*	-d*	0	0	-d
Reduction in Wild Horses									
Non-game	+d	+d	+d	+i	+d	+i	+i	-	-
Deer	+d	+d	+d	+i	+d	+i	0	+i	+i
Elk	+d	+d	+d	+i	+d	+i	0	+i	+i
Antelope	+d	+d	+d	+i	+d	+i	0	+i	+i
Bighorn Sheep	0	0	0	0	0	0	0	0	0
Upland Game Birds	+d	+d	+d	+i	+d	+i	0	+i	+i
Water Developments									
Non-game	+d	+d	+d	+i	+d	+i	0	-	-
Deer	0	0	0	0	0	0	0	0	0
Elk	0	0	0	0	0	0	0	0	0
Antelope	+d-i	+d-i	+d-i	+i-d	+d-i	+d-i	0	+d-i	+i-d
Bighorn Sheep	0	0	0	0	0	0	0	0	0
Upland Game Birds	+d	+d	+d	+i	+d	+i	0	+i	+i
Fence Construction									
Non-game	0	0	0	0	0	0	0	-	-
Deer	0	-i	-i	0	-i	0	0	0	0
Elk	0	-i	-i	0	-i	0	0	0	0
Antelope	0	-i	-i	0	-i	0	0	0	0
Bighorn Sheep	+d	+d	+d	+i	+d	+i	0	+i	+i
Upland Game Birds (Lake Creek and Herd Creek)	+d	+d	+d	+i	+d	+i	0	+i	+i
Brush Beating									
Non-game	+i-d	+d-i	+d-i	+i-d	+d-i	+i-d	+i-d	-	-
Deer	+d	+d	+d	+i	+d	+i	0	+i	+i
Elk	0	0	0	0	0	0	0	0	0
Antelope	+d	+d	+i	+i	+d	+i	0	+i	+i
Bighorn Sheep	0	0	0	0	0	0	0	0	0
Upland Game Birds	+d	+d	+d	+i	+d	+i	0	+i	+i

TABLE 3-8

A SUMMARY OF IMPACTS TO TERRESTRIAL WILDLIFE
AS A RESULT OF THE PROPOSED ACTION a/
(cont.)

	Habitat Alteration	Stress	Displacement	Carrying Capacity	Mortality	Birth Rate	Present Population	IOFC 15-year Goal b/	Maintenance of 15-year Goal
Plow and Seed									
Non-game	-i	-i	-i	-d	-i	-d	-d	-	-
Deer	0	0	0	0	0	0	0	0	0
Elk	0	0	0	0	0	0	0	0	0
Antelope	0	0	0	0	0	0	0	0	0
Bighorn Sheep	0	0	0	0	0	0	0	0	0
Upland Game Birds	0	0	0	0	0	0	0	0	0
Burning									
Non-game	+i	-i	-i	+i	+d	+i	-d	-	-
Deer	-i	-i	-i	-d	-i	-d	-d	0	0
Elk	0	0	0	0	0	0	0	0	0
Antelope	0	0	0	0	0	0	0	0	0
Bighorn Sheep	+i	+d	+d	+i	+d	+i	0	+i	+i
Upland Game Birds	+i	+d	+d	+i	+d	+i	0	+i	+i
Land Development									
Non-game	0	0	0	0	0	0	0	0	0
Deer (East Fork)	-i	-i	-i	-d	-i	-d	0	-d	-d
Elk	0	0	0	0	0	0	0	0	0
Antelope (Spud Creek)	-i	-i	-i	-d	-i	-d	0	-d	-d
Bighorn Sheep (East Fork, Road Creek, and Spud Creek)	-i	-i	-i	-d	-i	-d	0	-d	-d
Upland Game Birds	0	0	0	0	0	0	0	0	0

a/

+ = beneficial
- = adverse impact
d = decrease
i = increase
0 = no impact
* = impact presently occuring and will continue to occur

Example:		Stress	Mortality
	Notation:	+d	-i*
	Explanation:	Beneficial impact since stress is decreased.	Adverse impact since mortality is increased in degree by the proposed action but it is also occuring at the present time.

b/ Idaho Department of Fish and Game 15-year management goals are based on present habitat condition and population trends. If habitat is improved in the future, the population objectives may be increased in cooperation with BLM land use planning goals.

TABLE 3-9

PROJECTED BIG GAME HABITAT CONDITION IN 15 YEARS IN THE CHALLIS ES AREA WITH THE PROPOSED ACTION A/

Allotment	Mule Deer B/ Habitat			Elk Habitat			Antelope Habitat B/ (Winter)			Antelope Habitat B/ (Summer)			Bighorn Sheep Habitat		
	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good
Red Lake	–	6,858	212	–	–	–	–	1,140	793	–	15,248	802			
Herd Creek	–	10,867	–	882	3,755	1,423	–	–	–	–	760	40			
Road Creek	6,856	6,534	–	–	333	–	–	–	–	2,865	7,395	540	237	1,375	547
Bruno Creek	648	162	–	–	106	521									
Round Valley	–	–	3,975	–	–	–	–	1,083	1,767	–	11,543	607			
San Felipe	–	10,992	7,328	–	20,252	1,066	–	5,088	2,740	–	64,201	3,379			
Warm Springs	–	6,461	966	–	–	–	–	2,189	2,468	–	53,720	2,830			
Garden Creek	–	26,540	–	–	415	–	–	2,689	–	–	2,555	134	52	2,446	132
Pine Creek	3,056	764	1,206	–	–	–									
Spud Creek	6,328	1,582		–	614	–	738	82	–	1,920	2,640	240	–	569	–
Split Hoof	–	9,140	–	–	–	–	–	–	–	–	6,935	365			
Thompson Creek	2,832	708	–	198	1,488	298									
Bald Mountain	–	9,238	3,772	–	63	166									
Squaw Creek	4,888	1,222	–	506	617	1,123									
East Fork	–	12,164	776	–	26	14							3,819	5,690	1,130
Sullivan Creek	40	2,974	1,006	–	678	129									
	24,648	106,206	19,241	1,586	28,347	4,740	738	12,271	7,768	4,785	164,997	8,937	4,108	10,081	1,809
Total Acres		150,095			34,674			20,777			178;719			15,998	
Percent of Total	17%	71%	12%	5%	82%	13%	4%	59%	37%	3%	92%	5%	25%	63%	11%

A/ Criteria for habitat condition classification can be found in Appendix .

B/ Much of the increased condition is due to the projected recovery of the winter kill on sagebrush that occurred in 1976-77.

TABLE 3-10

PREDICTED IMPROVEMENT IN ANADROMOUS FISH HABITAT IN THE CHALLIS PLANNING UNIT RESULTING FROM THE PROPOSED ACTION

Stream 1/	Grazing System 2/	Relative Degree of Improvement Predicted
Salmon River	S, RR, DR	Slight 3/
Challis Creek	RR	Slight
Bayhorse Creek	RR	Slight
Thompson Creek	DR	Slight
Squaw Creek	DR	Slight
East Fork River	S, RR, DR	Slight
Road Creek	S	No Improvement
Herd Creek 4/	RR	Slight
Lake Creek 5/	RR	Moderate
Big Lake Creek	RR	Slight
Big Boulder Creek 6/	RR	No Improvement
Little Boulder Creek 6/	RR	No Improvement

1/ Fish habitat in smaller streams not used by anadromous fish would improve slightly.

2/ S=Seasonal
RR=Rest-rotation grazing or modified RR grazing
DR=Deferred-rotation grazing

3/ "Slight" is defined as some improvement within a habitat condition class. Present "poor" or "fair" conditions are not expected to improve to a higher classification.

4/ Improvement from "fair-good" to "good-excellent" by 1993 within fenced area but remainder of stream static in "fair-good" condition.

5/ Significant improvement within fenced area and slight improvement in remainder of stream.

6/ Big and Little Boulder Creeks have not and would not be impacted by grazing practices on BLM land.

The most serious factor responsible for small runs of anadromous fish in the unit is the heavy downstream mortality due to Snake and Columbia River Dams. As agencies work to reduce these losses, salmon and steelhead runs into the Challis area will increase. Stream dewatering for irrigation and unscreened irrigation diversions are also major limiting factors for anadromous fish production in the unit.

Grazing on public lands does not significantly degrade anadromous fish habitat in the unit, except in Herd, Lake and Road Creeks. On these streams, riparian vegetation removal and streambank trampling by livestock, wild horses and wildlife grazing along these streams has increased erosion and stream siltation, eliminated spawning sites, reduced salmonid egg survival, reduced fish food supplies and decreased stream shading. These grazing-induced effects all degrade fish habitat resulting in decreased fish production. Heavy livestock, wild horse and wildlife use of riparian areas is also responsible for much of the "poor" and "fair" habitat condition existing in resident trout streams in the unit (Table 2-21).

Figure 3-2 conceptualizes the unquantifiable adverse effects of large ungulates grazing have on salmonid stream habitat (Armour, 1977).

Herd Creek is the most important anadromous fish stream in the unit where grazing has significantly impacted rearing and/or spawning habitat for salmon and steelhead. The newly implemented rest-rotation grazing system presently installed in the Herd Creek Allotment and other grazing systems planned as part of the proposed action would probably not improve fish habitat significantly. Hormay (personal communication, 1976) stated that, "Vegetation in certain areas, such as meadows and drainage ways, are invariably closely utilized under any stocking rate or system of grazing. Such use may be detrimental to wildlife, esthetic or recreational or other values. Where this is the case, about the only way to preserve values is to fence the area off from grazing. Reducing livestock or adjusting the grazing season usually will not solve such a problem."

There is no published evidence to substantiate that once aquatic habitat in arid or semi-arid areas is degraded that rest-rotation systems contribute materially to improved conditions for fish. Earthen streambanks trampled by heavy ungulate use do not recover sufficiently during the rest cycle to improve fish habitat. Platts (1977) summarized a workshop pertaining to impacts of livestock on fish habitat that indicated deferred-rotation would not result in riparian-aquatic habitat conditions better than poor or fair.

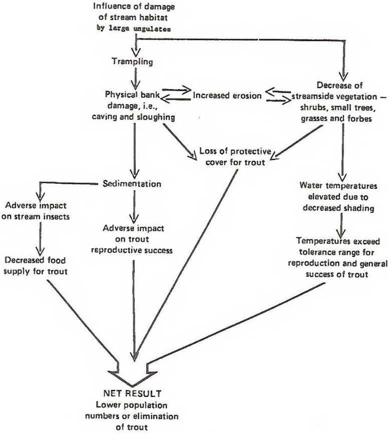
Excluding livestock from damaged stream areas is a proven management technique to increase fish production. Successful streambank fencing projects have been documented in Nebraska (Van Velson, 1977), Oregon (Winegar, 1977), Utah (Duff, 1978), and elsewhere.

Livestock exclusion by fencing 2.0 miles of Lake Creek and 1.25 miles of Herd Creek should improve streambank conditions from "fair-good" to "good-excellent" by 1993. Beneficial effects of fencing include riparian vegetation recovery, stabilization of the streambanks and decreased siltation.

This should increase fish production in these streams by increasing the carrying capacity for resident and juvenile anadro-

FIGURE 3-2

CONCEPTUALIZED FLOW CHART OF ADVERSE EFFECTS OF STREAM HABITAT DAMAGE BY LARGE UNGULATES ON TROUT POPULATIONS
(Armour 1977)


Influence of damage of stream habitat by large ungulates
Trampling
Physical bank damage, i.e., caving and sloughing
Increased erosion
Decrease of streamside vegetation — shrubs, small trees, grasses and forbes
Loss of protective cover for trout
Sedimentation
Water temperatures elevated due to decreased shading
Adverse impact on stream insects
Adverse impact on trout reproductive success
Temperatures exceed tolerance range for reproduction and general success of trout
Decreased food supply for trout
NET RESULT
Lower population numbers or elimination of trout

mous salmonids and improving water quality. Where livestock use of the streambanks is concentrated at water gaps and cattle crossings, habitat conditions on short stream sections would deteriorate due to loss of streambank vegetation and increases in stream siltation. These localized impacts are considered minor with no measurable decrease in fish production.

Spawning habitat within the fenced stream sections would improve as streambank stabilization and riparian vegetation recovery reduces stream siltation. However, fencing 1.25 miles of Herd Creek would not significantly increase spawning populations of anadromous fish. Upstream sources of silt attributable to natural erosion and heavy livestock use on Forest Service land would continue to degrade spawning habitat in the fenced Herd Creek section on BLM land.

Since Herd Lake acts as a sediment trap immediately above the proposed fencing project on Lake Creek, stream siltation would decrease dramatically in 2.0 miles of Lake Creek after livestock are excluded from the riparian area. Anadromous fish do not spawn in this stream section, but resident trout spawning habitat would improve significantly. Downstream salmon and steelhead spawning habitat in Herd Creek would indirectly benefit from fencing 2.0 miles of Lake Creek as stream siltation decreases and water quality improves.

As a result of the proposed action, erosion throughout the entire unit would decrease by 149,000 tons. Accompanying reductions in stream siltation will benefit fish production by improving spawning gravels and increasing the carrying capacity of streams for fish.

Geologic erosion and stream siltation accelerated by wild horse, livestock and wildlife grazing is especially critical in the Road Creek drainage. All but 0.8 miles of the fish producing streams in the Road Creek watershed are in "poor" condition due to lack of streamside vegetation, severe streambed siltation and unstable streambanks. The Road Creek drainage contributes a significant sediment load to the East Fork River and ultimately to the main Salmon River, degrading these high quality spawning and rearing habitats for anadromous fish.

As a result of the proposed action (see soils section, Chapter 3), soil erosion rates in the Road Creek Basin would decrease due to decreases in wild horse and livestock use of riparian areas. Resultant decreases in stream siltation would improve resident fish habitat in Road Creek and would benefit downstream anadromous fish spawning habitat in the East Fork and main Salmon Rivers.

Proposed brush-beating projects would result in small increases in stream siltation for 1-2 years, with a long-term decrease in erosion following treatment. Road Creek, the Salmon River and the East Fork River would receive most of this increase in silt; however, no loss in fish production is anticipated.

Small scale burning projects proposed for portions of the East Fork Allotment would not detrimentally affect the aquatic resource. Short-term increases in stream siltation following burning would be insignificant.

Adjusting livestock stocking rates to the level of the proposed action may result in some ranchers going out of business. If private land went to summer home developments and residential development, the floodplain areas traditionally used as pasture would change to a more concentrated use. Adverse impacts associated with residential development and population increases along Challis Planning Unit streams include:

1. Increased fishing pressure on resident and anadromous salmonids.
2. Increased disruption of salmon spawning activity by larger numbers of residents along streams.
3. Overall water quality degradation due to residential water use.
4. Increased water demand from streams for residential use.
5. Possible development of put-and-take trout fishery for additional residents will increase competition with native fish.

Wild Horses

A change in numbers of wild horses from approximately 586 animals to approximately 162 animals would change wild horse distribution patterns. There would be fewer bands of horses in the unit. It is impossible to predict if the horses would gravitate into a smaller total range within the unit or stay as widely disbursed as they are at the present time. Fewer wild horses on the range would increase availability of quality/quantity forage for the remaining wild horses. This is most significant on the winter range where depth of snow cover sometimes severely limits availability of forage. This may increase the chance for survival of animals under unusually hard winters.

Protecting the Malm Gulch Allotment and Sand Hollow Watershed from wild horse grazing reduces the total wild horse range. Protection of these areas would probably not affect the animals when stocked at an average level of 162 head.

Installation of rest rotation on 75 percent of the wild horse range would present special problems to wild horses. The construction of an additional 41 miles of fence in the San Felipe, Warm Springs and Split Hoof Allotments increases the hazard for wild horses to become entangled while the fence is standing or laying down (Standard Operating Procedure 13). The magnitude of this is unmeasurable at this time. Entanglement in fences could cause serious damage or death to an animal. Fences would limit the free-roaming of wild horses and confine them during the season livestock graze the allotments. Horses confined and made to crop the forage closely may have extremely severe effects upon their habitat (Stoddard and Smith, 1955). Where winter grazing by livestock would occur (Warm Springs Allotment), fences would present a physical barrier during the cattle use period by restricting movement in the allotment. When heavy snow cover is present, horses may not be able to move to historic winter range.

Rest rotation and deferred rotation grazing systems with the accompanying water developments concentrate cattle use on the pastures grazed. This would increase the competition of horses and cattle for available forage. Both cattle and horses primarily subsist on grasses. A study on diet similarities between wild horses and cattle was made by Dr. Richard Hansen of Colorado State University in the Challis wild horse area and the findings were as follows:

Cattle (grazing season long) Horse Spring	68.0%
Cattle (grazing season long) Horse Summer	65.3%
Cattle (grazing season long) Horse Fall	61.4%

Habitat overlap between wild horses, wildlife and cattle is keenest around water, in wet meadow areas and other overlap areas where animals tend to concentrate.

When pastures with wild horse winter range are grazed in the spring, summer and fall, forage for wild horses may be lacking in the winter. It is impossible to predict how intense this competition would be with the available data. The increased range made available to cattle by water developments would also increase the area of competition between wild horses and cattle (see Appendix 5).

Of the 17,630 acres of brush beating identified in the proposed action, about 8,470 acres would occur on wild horse general winter range; 1,280 of the 8,470 acres would occur on critical winter range. Additional forage resulting from this treatment would be usable to cattle and wild horses. This additional forage would reduce increase competition for forage between wild horses and cattle on these treated areas.

Livestock Grazing

Implementation of the proposed action would significantly affect livestock operations in the Challis Unit. Impacts to the livestock operators concerning adjustment in AUMs of use are displayed and discussed in the Socio-Economic section.

Establishment of the proposed action season of use (Table 3-11) would cause six of the total 38 operators to be restricted from both summer and fall grazing currently allowed. Six would no longer be allowed summer grazing, three would no longer be allowed fall grazing and one would have the winter season shortened one month.

The seasonal restriction from current use of the public lands would require these 16 livestock operators to adjust their total operation.

To compensate reductions of AUMs and loss of grazing on public lands primarily in spring, summer, and fall, livestock operators would either have to buy hay, lease pasture, or reduce numbers.

TABLE 3-11

CHANGE IN TOTAL AUMs AND CATTLE NUMBERS
RESULTING FROM PROPOSED ACTION, CHALLIS UNIT

Present Use		Proposed Action Level of Use		Change Resulting From Proposed Action	
AUMs	Cattle Numbers	AUMs	Cattle Numbers	AUMs	Cattle Numbers
17,444	7,700	10,436	3,722	7,008	3,978

If the forage (7,008 AUMs) identified in Table 3-11 were replaced by hay, it would require 1,779 tons annually.

There is very little irrigated or dry pasture available to lease in the Challis area. The only alternative for many of the range users would be to reduce their herds. It is impossible to predict the change in number of cattle raised in Custer County as a result of the proposed action because of the difference in capability of each operator to adjust their livestock operation. The change would probably be something less than the 3,978 cattle number in Table 3-10.

After 15 years under the proposed action there would be increased production of forage as a result of better management of the range. This would amount to 6,933 AUMs that could be allocated to livestock. At the time additional forage in determined available for grazing use an allocation would be made to grazing animals through the BLM planning system. For purposes of analysis, the 6,933 AUMs are considered for livestock use in the future.

Initial stocking rate	10,436 AUMs
Increased production after 15 years	6,933 AUMs
Total	17,369 AUMs

This total, within 85 AUMs of its present eight-year average use, could be available for livestock grazing in 15 years.

Economics. The socio-economic impacts from the proposed project stem from impacts on the ranch operators. The proposed action would adversely affect ranch operations by increasing costs and reducing cash flow.

By utilizing the 1975 average ranch budget shown in Chapter 2, it is possible to develop average impacts on the operators. Under the proposed action ranchers would experience a 180-AUM decrease, on the average, from their present operations (the ranchers' present operations are assumed to be their eight-year average AUMs and not their active qualifications). Decreases in AUMs range from zero to several thousand (for purposes of these calculations the largest operator was excluded so the distribution would not be skewed).

If the operators could graze their cattle on private pasture land not needed for growing hay, then, on the average ranch expenses would increase approximately $1,100 (180 AUMs X $6.00 per private AUM). If the operators were to purchase hay, it would cost them $3,600 each. A reduction in herd size would decrease the average herd from 180 brood cows to 111. This would reduce ranch income to a net loss of $8,026 (see Tables 3-12, 13 and 14).

In addition, the reduction of active AUMs reduces the amount of money that ranchers are able to borrow for short-term operating loans and for long-term mortgages. While BLM does not recognize a market price for AUMs, the Production Credit Association, the Farm Home Administration, and the Federal Land Bank Association use federal qualifications on public land in determining the repayment capability of ranchers who wish to borrow money. In the Challis area, grazing on BLM land is an important part of the ranch operation because the operators need a source of feed in the early spring. If the cattle were to graze on land considered part of the base property, the ranchers would get little or no hay for winter feed. (Refer to the livestock section for details on ranching operations in the Challis area).

Income loss for all 38 livestock operators could amount to $307,000. The mean dependency on BLM AUMs is 15.5 percent; 13 ranchers are more dependent than the average (see Table 3) and their mean decrease from present operations is approximately 35 percent.

TABLE 3-12

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ECONOMIC IMPACTS FROM
PURCHASE OF HAY

	Average per Ranch 1975
Returns	
Sale of Calves	$18,509
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	27,073
Expenses	
Land Rent	400
Feed	9,460
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	33,550
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-6,477
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-4,544

TABLE 3-13

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ECONOMIC IMPACTS FROM
HERD SIZE REDUCTION

	Average per Ranch 1975
Returns	
Sale of Calves	$11,427
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	19,991
Expenses	
Land Rent	400
Feed	5,860
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	29,950
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-9,959
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-8,026

TABLE 3-14

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ECONOMIC IMPACTS FROM
GRAZING ON PRIVATE LAND

	Average per Ranch 1975
Returns	
Sale of Calves	$18,509
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	27,073
Expenses	
Land Rent	400
Feed	6,960
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	31,050
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-3,977
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-2,044

TABLE 3-15

ECONOMIC IMPACTS OF THE PROPOSED ACTION
ON RANCHERS IN THE CHALLIS ES AREA

OPERATOR	ACTIVE AUMs	AVERAGE AUMs	PROPOSED AUMs	LOSS FROM ACTIVE	PERCENTAGE LOSS	LOSS FROM AVERAGE	PERCENTAGE LOSS	DEPENDENCY ON BLM AUMs
Baker, Eddie	290	283	111	179	-61.72	172	-60.78	8.05
Baker, Richard	213	209	81	132	-61.97	128	-61.24	7.24
Bennetts, Jim	135	135	135	0	0.00	0	0.00	11.23
Bishop, Laura	358	346	167	191	-53.35	179	-51.73	27.07
Bradshaw, Eugene	57	56	45	12	-21.05	11	-19.64	15.73
Bradshaw, Kenneth	172	119	94	78	-45.35	25	-21.01	25.50
Carlisle, Lewis	539	228	163	376	-69.76	65	-28.51	35.88
Chivers, Garth	278	16	135	143	-51.44	-119	100.00	15.42
Comlnotti, Fabio	264	246	67	197	-74.62	179	-72.76	11.45
Corrigan, Dick	88	78	32	56	-63.64	46	-58.97	14.97
Cutler, Howard	180	148	66	114	-63.33	82	-55.41	11.52
Ennis, Mrs. James L	134	127	85	49	-36.57	42	-33.07	31.72
Hammond, John	183	147	66	117	-63.93	81	-55.10	12.69
Hammond, Robert	38	17	24	14	-36.84	-7	41.18	12.57
Hanson, Margaret	465	383	159	306	-65.81	224	-58.49	15.99
Helm, Calvin	104	39	38	66	-63.46	1	-2.56	7.86
Horning, Tim	24	9	9	15	-62.50	0	0.00	24.39
Ingram, Will	5,542	4,521	3,436	2,106	-38.00	1.085	-24.00	24.83
Jan Mar Corp.	904	385	297	607	-67.15	88	-22.86	30.11
Keppner, Ray	230	199	82	148	-64.35	117	-58.79	7.66
Laverty, Ray	141	1	52	89	-63.12	-51	100.00	12.47
Leuzinger, George	65	41	36	29	-44.62	5	-12.20	7.72
Leuzinger, Jake & Son	186	145	56	130	-69.89	89	-61.38	20.61
Maraffio, Frank	300	226	117	183	-61.00	108	-48.23	14.27
Peck, Joseph	262	72	94	168	-64.12	-22	30.56	39.55
Pedrini Brothers	181	181	181	0	0.00	0	0.00	11.58
Philps, Ethel	155	136	56	99	-63.87	80	-58.82	3.78
Piva Brothers	413	337	152	261	-63.20	185	-54.90	4.92
Pleus, Herman	50	25	40	10	-20.00	-15	60.00	13.80
San Felipe Ranch	8,375	7,396	3,484	4,891	-58.40	3,912	-52.89	23.26
Sherwood, Archie	55	45	42	13	-23.64	3	-6.67	11.34
Smith, Kenneth	55	36	20	35	-63.64	16	-44.44	14.69
Stark, Kenneth	15	9	5	10	-66.67	4	-44.44	4.14
Stevens, Robert	29	7	10	19	-65.52	-3	42.86	4.01
Westgard, Gean	240	48	150	90	-37.50	-102	100.00	7.99
Westgard, Golden	155	155	97	58	-37.42	58	-37.42	3.23
Wooley, Dan	552	429	257	295	-53.44	172	-40.09	25.27
Yates, Ralph	473	467	295	178	-37.63	172	-36.83	15.33
Totals	21,900	17.447	10.4361	11,464		7,011		

Reductions in livestock income would not only result in reduced livestock employment but also in secondary impacts in the local economy. For example, considering a reduction of $70,000 in livestock income will result in a reduction of eight ranch employees and loss of an additional $20,000 of income, principally in the livestock, argiculture, and trade sectors. No secondary employment impacts would be expected.

A reduction in the nature of $230,000 in livestock income may cause a loss of 26 employees in the livestock sector. Secondary losses in earnings would be an additional $70,000 distributed among livestock ($14,000), agriculture ($29,000), and trade ($15,000) with the remainder impacting manufacturing and transportation. There would be a potential for an additional loss of six jobs in the county (these impacts have been calculated by DYRAM, a computer model developed by the Bureau in 1976. An explanation of DYRAM may be found in Appendix 6-A).

There is a demand for recreation property in Custer County. This demand plus increasing costs might pressure operators along the East Fork of the Salmon river to sell to developers. One rancher in this area has already sold his base property to a developer (Spring, 1978). There are seven other operators in the East Fork area that may sell their property. This could result in a loss of seven ranches and 16-24 full-time residents and in an increase of at least several hundred summer residents. The growth in the number of summer residences would increase the tax base of Custer County.

Net ranch income of the average livestock operator after 15 years would be about the same as the present situation. Increased forage production available to livestock would provide approximately the same level of grazing as the eight-year average.

Public Values and Attitudes. Land sales to subdividers and scenic easements were seen by some respondents as possible means of compensating for financial losses due to grazing cuts. Reduction in herd size was mentioned by three respondents as the only possible response to grazing cuts, and one said it would be difficult to carry on at all with herds below about 250 head. Two respondents predicted most ranchers would hang on in business on the grounds they were tough and had survived worse problems in the past. Three people said operators who were out of debt had the best chance of staying in business.

A number of respondents remarked area ranchers have been losing money for several years. When asked what motivated ranchers to maintain money-losing operations, the most frequent response (five respondents) was it's the only life they know. Some of these people expressed apprehension about starting a new life. Four respondents cited independence (being one's own boss) as a strong motivation, and four mentioned a family tradition of several generations' duration. Three stated simply, "It's a good way of life." None of those interviewed gave economic reasons for being in the livestock business. Rather, economic considerations were more a barrier to continuation or initiation of livestock operations. Over half the respondents said it was nearly impossible for a young person to get into ranching unless he inherited or married into an operation. While many of the young people would prefer to stay in Custer County and go into ranching, five people said most of the area's youth are forced to go elsewhere to make a living.

The overall impression conveyed by the interviews was that respondents had not had sufficient time since announcement of BLM's plans to explore the available options and assess their relative desirability and feasibility. Based on the information available, no firm predictions of the reaction of permittees to the proposed action can be made in this Supplement, although respondents' comments suggest the motivation to remain in the area and maintain their lifestyle is very strong among ranchers in the area.

Anticipated Impacts of Grazing Use Adjustments on the Community. About half the respondents expressed the opinion Custer County depends on BLM grazing for its economic and social stability. One town-dweller said the ranchers were the "backbone of the community," and others pointed out the towns' grocers and feed, seed, and implement dealers relied on sales to ranchers for a living. As one respondent put it: "Challis would go down the tubes without the ranchers." One respondent thought town-dwellers were indifferent to ranchers' problems, but two others said the townsfolk completely support and sympathize with the ranchers. One indicator may be that while none of the Custer County Commissioners are rancers, both of those interviewed expressed views in harmony with those of the respondents who are livestock operators.

While respondents found it difficult to describe how operators scheduled for severe grazing use adjustments would manage to stay in business, implicit in all the interviews was a strong motivation for carrying on if at all possible. If the demand for residential sites in the area is as strong and persistent as most respondents believe, it seems likely permittees in financial difficulty would gradually sell off bits and pieces of their property to cover the costs of maintaining their way of life (rather than the economic viability of their livestock business). Given the tone of the interviews it seems less likely that many may sell out and move away as a direct result of the proposed action.

Were the proposed action to accelerate land sales to subdivision developers, the population of Custer County could increase even more rapidly than in the recent past (see section on population). This would tend to benefit those businesses catering to the general public, and would improve the county's difficult tax situation. Since the trend so far has been for newcomers to be retired, while the youth of the area have been largely forced to seek elsewhere for employment, the mean age of the Custer County population would be likely to increase over time. The existing trend toward a loss of students from the school system would probably accelerate due to the loss of young families who cannot make a living in the area. Because existing facilities and transportation services would probably have to be maintained, the cost per capita of educating the county's children would probably increase. With an increase in the elderly population, the pressure on medical services would tend to increase, although the lack of a hospital in the county could inhibit the immigration of persons whose health is precarious.

New residents coming from urban settings may expect more services provided by government than are available in Custer County, where many kinds of help are traditionally provided by neighbors rather than city, county, or state officials. A rapid influx of new residents could preclude their gradual absorption into the neighborly way of life, which would probably occur with slow or small-scale increase in population. Changes in the character of the community could include losses in community cohesion, the ability to rely on well-known neighbors, and some traditional forms of cooperation and comradeship such as the volunteer fire department. Such losses, occurring gradually, are difficult to measure in quantitative terms and may be difficult for even those affected to articulate, but they would probably be felt by long-time residents of the area. Changes which would be noticeable to old-timers would probably not be apparent to newcomers, who would see the community as closer-knit and more neighborly than urban society.

Another unquantifiable impact of the proposed action is its contribution to an existing, and apparently intensifying, alienation and distrust of government. The perception that local control over the community's future is precluded by federal government actions is very strong among respondents and indicates a resentment which is likely to persist as Custer County continues to develop as a recreation, retirement, and wilderness area in the context of continuing restrictions on use of public lands.

This analysis concentrates on the perceptions of a small sample of local people and does not include the views of non-local groups with an interest in the resources to be managed under the proposed action. It should be noted that trends and actions seen as undesirable by long-time residents of the area may be viewed as progress by other interested groups. Lack of specific information on such groups prevents a more extensive discussion of their points of view.

Water

Water Use. Total consumptive water requirements by livestock and the major wildlife species and wild horses in the unit is estimated to be 4,905,360 gallons per year under the proposed action. This is a decrease of 53 percent of the water currently consumed. Livestock consume an estimated 3,130,800 gallons of water per year or a decrease of 40 percent of the current year's use. A decrease of 5,585,652 gallons of the annual water consumed by the major ungulates would have no significant impacts on total water, since this would only be a very small fraction of the total annual water yield.

TABLE 3-16

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK, WILD HORSES AND WILDLIFE UNDER THE PROPOSED ACTION

Animal	Animal Months/Year	Gallons per Animal/Month	Total Gallons per Year
Livestock	10,436	300	3,130,800
Wild Horses	1,944	375	729,000
Deer	38,846	15	582,690
Antelope	3,926	30	117,780
Elk	1,683	150	252,450
Bighorn Sheep	1,544	60	92,640
			4,905,360 gallons/year

The Garden Creek drainage would continue to furnish an ample supply of water to meet all needs, both present and future, of the Challis municipal water system.

Streamflow. The proposed action would not significantly alter the total annual water yield from public land. Therefore, maximum and minimum streamflows for the Salmon River listed in Table 2-32, would not be expected to change. Some smaller streams, however, would experience an increased flow because of less consumption by large ungulates. This would only occur on those small streams adjacent to areas of heavy animal concentration and may only be for a short duration. The groundwater in the unit would be unaffected by this action.

Water Quality. The concentration of the various chemicals which determine water quality in base flows of a stream is dependent on geologic material through and over which it flows and the length of time it is in contact with soluble salts. Because of this, livestock grazing would not have much influence on the concentration of dissolved solids. Under the proposed action the level of dissolved solids would usually meet the specific parameters established by the Environmental Protection Agency.

However, streambank disturbance or rising water levels due to an overland flow event generally result in a high suspended sediment concentration. Grazing animals concentrate along streams, wet meadows, and valley bottoms, heavily utilizing vegetation. This results in streambank sloughing and sediment influx into the stream. This concentrated use made on the riparian zone reduces its effectiveness as a filter field in screening overland sediment from entering the water.

Six allotments (Table 1-5) are scheduled to have rest-rotation grazing systems. These allotments would each have a pasture rested for one year. Streams flowing through those pastures will have a reduced amount of suspended sediment during the rest year. However, when that pasture is grazed, suspended sediment concentrations are expected to return to current levels.

In those allotments not shceduled for rest-rotation systems, livestock would, sometime during the year, graze in all pastures. Suspended sediment levels in streams flowing through these allotments would not be expected to change.

The estimated sediment yields by allotment are listed on Table 3-6. The projected estimated sediment yield for the unit is 288,000 tons of soil annually or a reduction of 149,000 tons from the current annual rare. The total suspended sediment in the Salmon River would be expected to decrease.

Suspended sediment is presently deposited downstream, forming new gravel bars and altering the stream channel. The change in the river flow tends to increase bank cutting and the loss of sometimes valuable farmland. The proposed action would reduce the amount of suspended sediment and possibly the amount of bank cutting.

Currently, water is diverted from the Salmon River for irrigation purposes. This water, heavy with silt, adversely affects desirable soil characteristics, i.e., those controlling infiltration, runoff, the moisture storage capacity. This tends to reduce productivity of the irrigated land. The proposed action would reduce the amount of sediment in the Salmon River.

The Challis municipal water supply treatment plant presently removes suspended sediment from Garden Creek before it enters the system. The proposed action would reduce the amount of sediment in Garden Creek.

Fecal coliform from livestock would be reduced below existing levels in streams which flow through those allotments scheduled for rest-rotation systems (Table 1-5). Since all rest-rotation systems have pastures not used in alternate years, streams flowing through these pastures would contain no fecal coliform bacteria from livestock. When that pasture is grazed, however, the bacteria would be expected to rise to near current levels.

In those allotments not scheduled for rest-rotation systems, livestock would, at one time or another, use all pastures within the allotment. Fecal coliform bacteria levels would not be expected to change form current levels under the proposed action.

Recreation

There would be no significant impacts to the recreation resources as a result of the proposed action.

Cultural Resources

Damage and destruction would continue to occur at known cultural resource sites (268 sites) for three years. This would continue until the proposed cultural resource management activity plan could be initiated. These sites are unique and vulnerable to all levels of ground-disturbing activities, including trampling by livestock and streambank and gully erosion.

Damage to unknown sites and subsurface sites not discovered during project surveillance would be almost certain to occur. In cases where salvage mitigation is required, the impact would not be fully mitigated. Salvage of cultural resources is an unavoidable adverse impact. Once excavated, a site is effectively destroyed and removed from future research considerations which may utilize new techniques. Salvage is rarely as effective as non-salvage research programs, partially because of time limitations, funding and personnel competence. Emergency salvage, required by unexpected discoveries during project initiations, would be even less effective.

Reduction in the rate of soil erosion resulting from the proposed action would cause a slower rate of change to most of the cultural resource than is occurring under present conditions.

Chapter 4

Mitigation

All mitigation proposed is described in Chapter 1 as part of the proposed action.

Chapter 5

Unavoidable Adverse Impacts

The adverse impacts described in Chapter 3 are unavoidable impacts since there is no mitigation proposed other than that identified in Chapter 1. To save repetition, the adverse impacts are not repeated in this section.

Chapter 6

Relationship Between Local Short-Term Uses of Man's Environment and Maintenance and Enhancement of Long-Term Productivity

For purposes of this analysis, short-term is defined as the period of time required to achieve the objectives of the proposed action (approximately 15 years after implementation). Long-term is the period of time beyond 15 years in which impacts, as a result of project implementation, would still occur.

The proposed action allocates forage for grazing ungulates in the Challis Unit (330,122 acres of public land). Range improvements would occur on approximately 76 acres. Vegetation manipulation would occur on approximately 23,385 acres.

During the first five years, approximately 23,461 acres of land would be distributed by proposed improvements and vegetation maniplulations. Construction activities associated with these improvements would result in some short-term loss of productivity.

Allotment management plans would be implemented on nine allotments in the first five years.

SOIL AND VEGETATION

The proposal would cause short-term losses of soil and vegetative resources as a result of increased concentration of livestock in certain pastures. Construction and vegetative manipulation would also cause short-rerm losses to occur locally on these resources. However, stabilized productivity and long-term gains would occur for these resources in six to nine years. These long-term benefits would occur in the form of improved species compostion and more desirable and vigorous plants for soil protection, wildlife, and livestock use. Increased infiltration, permeability and decreased erosion would result.

Long-term improved wildlife habitat and increased populations would also be associated with soil and vegetation stabilization and recovery. Water quality is predicted to stabilize and improve as a result of decreased sediment yield.

WILDLIFE

Terrestrial

Wild animals could temporarily be displaced by range improvement and vegetation treatment activities. Many of the improvements involve developing new or improving existing water sources and would include provisions for wildlife watering. The period of disturbance or displacement would generally be of short duration. Long-term benefits would occur on improvement of wildlife habitat.

Aquatic

In most streams within the Challis Unit, habitat conditions for fish production are predicted to improve gradually during the 15-year period as vegetation ground cover increases and soil conditions improve. Over the long-term for most streams in the unit, there would be less sedimentation of streambeds, some increases in streambank vegetation and lower summer water temperatures. Increased streambank and channel stability would occur in certain streams, which would improve conditions for salmonids in these streams.

Wild Horses

Wildlife, wild horses, and livestock may compete for the same forage. When grazing systems are implemented, there would be increased competition for forage between wildlife, livestock and wild horses in the use pastures. As vegetation productivity improves through the grazing cycle, competition between animals would diminish in many pastures, but competition for forage on crucial big game winter range would continue over the long-term.

Livestock Grazing

A short-term loss of early spring grazing of cattle would occur. Ranchers would have to either: (1) lease pasture; (2) buy hay; (3) reduce numbers of cattle; or (4) some mix of all three.

Over the long-term increased quality and quantity of livestock would occur on public land.

Socio-Economic Conditions

The proposed action would have major short-term adverse impacts to ranch income and local economy and minor adverse impacts to employment from ranchers that may be forced out of business.

As vegetation production on public land increases, long-term beneficial impacts will occur as stocking levels for livestock increase. There is no way the beneficial impact can be predicted as vegetation production increases. New allocations to grazing ungulates would be made based upon criteria developed in updating the MFP for the Challis Unit.

If ranchers are forced out of business, ranch property along the East Fork of the Salmon River would probably be sold to developers for summer and full time resident property.

WATER RESOURCES

Water quality and fish habitat in several streams of the Challis Unit would decline locally during construction of proposed range improvements and vegetation manipulations and early stages of the proposed action. However, long-term productivity of the Challis Unit streams would improve as a result of less tons of sediment being deposited into the stream after the grazing system becomes established and stabilized.

Chapter 7

Irreversible and Irretrievable Commitments of Resources

Human resources used in implementing this proposal are considered to be irreversible and irretrievable. Monies, fuel, and materials used to develop the proposal are considered to be irretrievable.

Archeological and other historical, scenic, or cultural values which may be inadvertently destroyed as a result of proposed actions are also considered to be irretrievable. Development of the soil resource has occurred over hundreds of years. Soils eroded as a result of the proposed action are considered to be irretrievable. Except as noted above all other resources involved in this proposal are retrievable and/or reversible. Those include such resources as livestock, wildlife, vegetation, and wild horses.

VEGETATION

Construction of improvements and vegetation treatments would remove approximately 11 acres from current production for the life of the improvements/treatment. This is considered to be an irretrievable but not irreversible commitment.

SOIL

Top soil that is displaced by erosion as a direct result of the proposed action is irretrievable. However, sediment yields with the proposed action are estimated to be reduced about 150,000 tons annually.

WILDLIFE

Wildlife populations are considered to be renewable resources and are retrievable, providing their habitat is not converted to other uses and soil resources are preserved.

SOCIO-ECONOMIC CONDITIONS

Land may be diverted from agricultural production to residential use (summer and full time). This would be considered irretrievable commitment of this land.

CULTURAL RESOURCES

Proposed livestock grazing and development of facilities could disturb certain cultural resources. Once disturbed, historical and archaeological sites as well as artifacts are no longer available for future study. This can result in a data gap in the history of an area and would be considered an irretrievable commitment.

LOSS OF POWER AND MATERIALS USED IN DEVELOPMENT

Fuel and materials consumed in support of the proposed action would be expended over the project life and are considered to be an irretrievable commitment.

Chapter 8

Alternatives to the Proposed Action

INTRODUCTION

Six alternatives are addressed in this chapter. They are: (1) Continuation of present management (no action); (2) Elimination of livestock and wild horse grazing; (3) Minimum constraints on livestock grazing; (4) Minimum constraints on wildlife; (5) Minimum constraints on wild horses; and (6) Reduced levels of grazing by large ungulates. Table 8-1 shows the levels of use for each alternative.

Table 8-1

SUMMARY OF ALTERNATIVE USE LEVELS

	Use Levels (AUMs)		
Alternative	Livestock	Wild Horses	Wildlife (Big Game)
Continuation Present Management	17,444	8,790	6,758
Elimination of Livestock and Wild Horses	0	0	7,772
Minimum Constraints Livestock	12,456	1,381	6,332
Minimum Constraints Wildlife	9,202	2,115	7,772
Minimum Constraints Wild Horses	10,100	4,890	7,772
Reduced Levels of Grazing	7,158	1,200	7,772

The proposed grazing systems identified for the various alternatives are the same as in the proposed action and are described in Chapter 1. Construction methods, standards and standard operating procedures for the range improvements and vegetative manipulation are the same as described in Chapter 1. Other resource management functions would continue to operate within the Challis area according to approved District programs. With the exception of the elimination of grazing by livestock and wild horse alternative, the Herd Creek AMP would be continued as described in Chapter 1 for the proposed action.

Only the significant impacts for each resource value affected by each alternative are analyzed. Where the impacts are the same as would occur under the proposed action, these impacts are referenced and are not repeated again in this chapter. The analysis of impacts for each alternative is based on the same long-term time frame (15 years) as the proposed action. A summary table listing the impacts for the proposed action and each alternative, as well as a comparative analysis, is located at the end of this chapter.

CONTINUATION OF PRESENT MANAGEMENT (NO ACTION)
(ALTERNATIVE 1)

Description

This alternative, for purposes of analysis, assumes that the present allotment boundaries, class of livestock and use levels would remain the same as licensed in 1977 (see Table 8-2). No new range improvements or vegetation manipulation would be implemented; however, existing range improvements would continue to be maintained in a useable condition.

The wild horse numbers would be controlled to maintain an average of 586 horses, the estimated number now occurring in the area. Excess numbers would be gathered approximately every year. The AUMs and location of the horse herd by allotment is shown in Table 8-2.

Since the number of wildlife are not under the control of BLM, it is expected they will fluctuate according to population dynamics and habitat condition. For analysis purposes, the present numbers and locations will be utilized as shown in Table 8-2.

ANALYSIS OF IMPACTS

Vegetation

Implementation of this alternative would result in the continuance of present management practices. The 1977 soils/vegetation inventory indicates that there is a significant amount of vegetation in poor ecological condition and in a downward trend. The inventory also indicates that an overall 40 percent downward adjustment in livestock grazing is needed in order to stock the grazing units at proper carrying capacities. Therefore, the impacts shown in Tables 8-3, 8-4, and 8-5 would be the result of the continuance of early spring turnout dates with no provisions for spring rest or deferral of spring use and an overall over obligation of the forage caused by excessive stocking rates. All projections are made based on conditions as they would occur after 15 years under present management.

A summary of the condition, trend, and available AUMs for this alternative is as follows:

TABLE 8-2

NO ACTION ALTERNATIVE

Allotment	Livestock Present Use 8-Year Average			Wild Horses			Wildlife											
							Elk			Deer			Antelope			Big Horn Sheep		
	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs	Numbers W/SSF	Season of Use	AUMs	Numbers	Season of Use	AUMs
Red Lake	785	5/1 to 6/30	1,062	53	Yearlong	795				400	W/SP	441	50/30	W/SP/SU/F	31			
Herd Creek*	666	6/16 to 10/10	1,188				20	W/SP	38	500	W/SP	552	0/10	SP/SU/F	5			
Road Creek	322	5/1 to 6/30	548	64	Yearlong	960	2	W/SP	4	425	W/SP	469	0/55	SP/SU/F	26	18	W/SP	18
Bruno Creek	35	5/16 to 9/30	127				8	W/SP	16	100	W/SP	45						
Round Valley	395	5/1 to 6/30	363							50	W/SP	55	115/40	W/SP/SU/F	58			
San Felipe/ Peck Canyon	1,500	5/1 to 9/29	3,312	129	Yearlong	1,935	140	W/SP	271	155W/37S	W/SP/SU	209	425/223	W/SP/SU/F	248			
Warm Springs	1,250	5/1 to 12/15	7,583	275	Yearlong	4,125				175	W/SP	193	160/190	W/SP/SU/F	144			
Garden Creek	878	5/1 to 6/30	876				40	W/SP	25	875	W/SP	965	20/20	W/SP/SU/F	18	23	W/SP	24
Bald Mountain	501	5/1 to 6/30	614				5	W/SP	10	800	W/SP	882						
Thompson Creek	34	5/16 to 10/15	126				19	W/SP	37	200	W/SP	221						
Split Hoof	195	5/1 to 6/30	204	41	Yearlong	615				200	W/SP	221	0/30	SP/SU/F	14			
Squaw Creek	322	5/1 to 6/30	444				18	W/SP	35	284	W/SP	316						
Spud Creek	182	5/1 to 6/30	240				5	W/SP	10	290	W/SP	319	140/15	W/SP/SU/F	54	6	W/SP	6
Pine Creek	132	5/16 to 6/10 10/1 to 10/16	179							200	W/SP	221						
East Fork	440	5/1 to 6/30	492				5	W/SP	10	300	W/SP	330				40	W/SP	42
Sullivan Creek	63	5/1 to 6/30	81				5	W/SP	10	150	W/SP	165						
Malm Gulch	0	None	0	24	Yearlong	360	0		0	0		0						
Total	7,700		17,444	586		8,790	267		466	5,141		5,604	910/613		598	87		90

* Herd Creek Implemented AMP Rest-Rotation Three Pasture

Vegetation Condition	Present Acres	Future Acres	Percent Change
Good	33,815	36,200	+ 7
Fair	145,440	117,381	-19
Poor	103,567	129,241	+25
Rock, Douglas-Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Trend In Condition	Present Acres	Future Acres	Percent Change
Up	12,790	12,790	
Down	72,977	72,977	
Static	197,055	197,055	
Rock, Douglas-Fir, Burned Areas	47,300	47,300	
Total	330,122	330,122	

Soils

Sediment Yield. Under this alternative, after 15 years yield would increase 10 percent, or 43,000 tons annually, to an average of 1.45 tons per acre, as a result of continued loss of plant and litter cover.

Wildlife-Terrestrial

Beneficial and adverse impacts are discussed in Table 8-6. Predictions of wildlife replacement, losses, and displacement, as a result of this alternative, can be determined using Appendix 3-A, 3-B, and 3-C.

Wildlife-Aquatic

If present land management practices continue, populations of anadromous fish would increase only as fish mortality decreases in the lower Columbia River system. Unscreened irrigation diversions would remain as a limiting factor for steelhead and salmon smolt production in the unit. Habitat degradation caused by livestock, wild horse, and wildlife use of Herd, Lake and Road Creek riparian areas would continue to reduce the carrying capacity of these streams for juvenile anadromous fish. Anadromous fish streams including Bayhorse, Squaw, Thompson, Big Lake, Big Boulder and Little Boulder Creeks would remain in their present condition (Table 2-23) since they are not significantly impacted by grazing or public land.

Resident trout streams with "poor" or "fair" habitat conditions (Table 2-21) caused by present grazing use would remain in their present condition because future grazing use would be similar to past use. Continued siltation and other physical habitat changes

TABLE 8-3

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE NO ACTION ALTERNATIVE

Allotment	Current AUMs Available For Livestock	Future AUMs Available For Livestock
Red Lake	613	599
Herd Creek	1,411	1,411
Road Creek	346	217
Bruno Creek	85	55
Round Valley	438	297
San Felipe	3,484	2,064
Warm Springs	2,201	1,344
Garden Creek	600	355
Bald Mountain	296	158
Thompson Creek	51	17
Split Hoof	118	121
Squaw Creek	133	101
Spud Creek	202	114
Pine Creek	181	127
East Fork	192	160
Sullivan Creek	85	53
Malm Gulch	0	0
Total	10,436	7,193

TABLE 8-4

PRESENT VEGETATION CONDITION COMPARED TO FUTURE CONDITION AFTER FIFTEEN YEARS IF PRESENT MANAGEMENT CONTINUES (ACRES)

	Present				No Action Alternative			
Allotment	Good	Fair	Poor	Rock, Douglas-Fir/Burn	Good	Fair	Poor	Rock, Douglas-Fir/Burn
Red Lake	2,186	9,217	8,251	3,541	2,186	8,480	8,988	3,541
Herd Creek	8,292	6,637	2,138	4,983	8,292	6,637	2,138	4,983
Road Creek	1,800	9,430	2,250	2,085	1,800	8,763	2,917	2,085
Bruno Creek	494	537	76	1,271	494	537	76	1,271
Round Valley	6,010	3,978	2,596	919	6,010	3,978	2,596	919
San Felipe	3,370	32,272	39,267	6,407	4,574	20,230	50,105	6,407
Warm Springs	5,063	36,513	15,839	2,288	5,063	25,752	26,600	2,288
Garden Creek	699	16,726	8,988	4,045	699	14,968	10,746	4,045
Bald Mountain	327	5,977	7,507	8,726	410	5,672	7,729	8,726
Thompson Creek	276	2,119	785	2,415	276	2,039	865	2,415
Split Hoof		5,153	2,759	503	0	4,993	2,919	503
Squaw Creek	760	1,036	2,651	2,597	760	752	2,935	2,597
Spud Creek	307	3,568	2,797	2,184	307	3,568	2,797	2,184
Pine Creek		3,903	559	564	992	2,911	559	564
East Fork	61	4,861	4,384	2,404	223	5,023	4,060	2,404
Sullivan Creek	4	1,383	512	1,671	4	890	1,005	1,671
Malm Gulch	4,166	2,130	2,208	692	4,110	2,188	2,206	692
Totals	33,815	145,440	103,567	47,300	36,200	117,381	129,241	47,300

TABLE 8-5

PRESENT TREND IN VEGETATION CONDITION COMPARED TO FUTURE TREND AFTER FIFTEEN YEARS IF PRESENT MANAGEMENT CONTINUES (ACRES)

ALLOTMENT	PRESENT				NO ACTION			
	UP	DOWN	STATIC	ROCK/DOUG. FIR/BURN	UP	DOWN	STATIC	DOUGLAS FIR, ROCK, AND BURN AREAS
Red Lake	0	3,630	16,024	3,541	0	3,630	16,024	3,541
Herd Creek	0	570	16,497	4,983	*	*	*	*
Road Creek	0	4,789	8,691	2,085	0	4,789	8,691	2,085
Bruno Creek	0	0	1,107	1,271	0	0	1,107	1,271
Round Valley	0	0	12,014	919	0	0	12,014	919
San Felipe	3,960	24,500	46,449	6,407	3,960	24,500	46,449	6,407
Warm Springs	0	23,450	33,965	2,288	0	23,450	33,965	2,288
Garden Creek	0	6,970	19,443	4,045	0	6,970	19,443	4,045
Bald Mountain	3,670	2,630	7,511	8,726	3,670	2,630	7,511	8,726
Thompson Creek	2,020	520	640	2,415	2,020	520	640	2,415
Split Hoof	0	2,600	5,312	503	0	2,600	5,312	503
Squaw Creek	0	650	3,797	2,597	0	650	3,797	2,597
Spud Creek	620	0	6,052	2,184	620	0	6,052	2,184
Pine Creek	0	0	4,462	564	*	*	*	*
East Fork	2,520	0	6,786	2,404	2,520	0	6,786	2,404
Sullivan Creek	0	1,648	250	1,672	0	1,648	250	1,672
Malm Gulch	0	1,020	7,425	691	0	1,020	7,425	691
Total	12,790	72,977	197,055	47,300	12,790	72,977	197,055	47,300

*Indicates no change from the proposed action.

TABLE 8-6

IMPACTS TO TERRESTRIAL WILDLIFE
NO ACTION
ALTERNATIVE 1

	NON-GAME WILDLIFE	DEER	ELK
Allocation of Forage	Habitat presently in a downward trend would continue. Cover and forage quality and quantity will decrease. Increase in stress, displacement/elimination, mortality and decrease in natality, population and species diversity would continue.	No immediate impacts to present populations or IDF&G 15 year objectives. However, the habitat would probably not be able to sustain the 15 year objectives for very long. Quality and quantity of habitat on areas suitable to livestock and horses will continue to decrease spring range. Carrying capacity will decrease.	No impacts to present populations or IDF&G 15 year objectives. However, the habitat would probably not be able to sustain the 15 year objectives for very long. Quality and quantity of habitat on areas suitable to livestock will continue to decrease, reducing carrying capacities and future potential population increases.
Turnout Dates	Those areas presently in upward trend would have the opposite (beneficial) impacts addressed above. Stable areas would remain the same.	Same as proposed action but intensified due to large numbers of livestock.	Same as proposed action but intensified due to large numbers of livestock.
Grazing Systems	Herd Creek Grazing System would have same impacts to deer and elk as discussed in the proposed action.	Same impacts as proposed action except only on Herd Creek.	→
Ecological Condition Change	Adverse impacts associated with lack of cover and forage, as discussed in proposed action would remain. Areas in upward trend would have habitat quality increased.	Same as Allocation of Forage except areas in upward trend would increase quality and quantity of habitat and areas in downward trend would continue to decrease habitat quality and quantity of spring range on livestock use areas.	Same as Allocation of Forage except areas in upward trend would increase quality and quantity of habitat and areas in downward trend would continue to decrease habitat quality and quantity on suitable livestock areas.
Social Interaction	Stresses associated with cows and horses (physical and social) would continue. Habitat quality would be decreased.	Same as proposed action only intensified, especially during spring.	Same impacts as proposed action only intensified.
Use of Riparian Zones by Livestock and Horses	Same adverse impacts as proposed action but impacts would be intensified.	Same as proposed action only intensified due to larger numbers of livestock.	Same as proposed action but not as important to wintering elk.
Reduction in Wild Horses	Same as proposed action with impacts intensified.	No reduction would cause continued social stress and competition for forage and reduction of habitat quality.	Not applicable unless horses expand use areas onto elk ranges. Then social interaction and competion for forage would reduce habitat quality.
Water Developments	Maintenance would have no impacts.	No impact.	→
Fences	Same as above.	→	→
Brush Beating	Not applicable.	→	→
Plow and Seed	Not applicable.	→	→
Burning	Not applicable.	→	→
Land Development	Not applicable.	→	→

TABLE 8-6

IMPACTS TO TERRESTRIAL WILDLIFE
NO ACTION
ALTERNATIVE 1

	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Allocation of Forage	Same as deer and elk.	Same as deer and elk except most critical on Marco Creek.	Same as other spp.
Turnout Dates	Same as proposed action.	→	Same as proposed action only intensified due to large numbers of livestock.
Grazing Systems	Same impacts as proposed action except only on Herd Creek.	No impact.	→
Ecological Condition Change	Same as deer and elk.	→	Same as other spp.
Social Interaction	Same impacts ss proposed action only intensified.	Continued social interaction would cause stress to populations. This would lower visbility and herd productivity.	Same as proposed action only intensified due to greater numbers of livestock.
Use of Riparian Zones by Livestock and Horses	Same as proposed action but intensified.	Does not apply.	Same as proposed action except adverse impacts intensified.
Reduction in Wild Horses	Would cause continued social stress, forage competition, decrease in carrying capacity and future population potential would also be decreased.	Does not apply.	Continued populations would cause adverse social impacts, competition for forage and nest trampling.
Water Development	No impact.	→	→
Fences	No impact.	→	→
Brush Beating	Not applicable.	→	→
Plow and Seed	Not spplicable.	→	→
Burning	Not applicable.	→	→
Land Development	Not applicable.	→	→

TABLE 8- 7

PROJECTED BIG GAME HABITAT CONDITION IN 15 YEARS
IN THE CHALLIS ES AREA WITHOUT THE PROPOSED ACTION A/

Allotment	Mule Deer B/ Habitat			Elk Habitat			Antelope Habitat B/ (Winter)			Antelope Habitat B/ (Summer)			Bighorn Sheep Habitat		
	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good
Red Lake	-	6,858	212				-	1,140	793	-	15,248	802			
Herd Creek	-	10,867	-	882	3,755	1,423				-	760	40			
Road Creek	6,856	6,534	-		333					2,865	7,395	540	237	1,922	
Bruno Creek	648	162	-	106	423	98									
Round Valley	-	-	3,975				-	1,083	1,767	-	11,543	607			
San Felipe	-	10,992	7,328	4,084	15,955	1,279	-	5,088	2,740	-	64,201	3,379			
Warm Springs	-	6,461	966				-	2,189	2,468	-	53,720	2,830			
Garden Creek	-	26,540	-	62	353	-	-	2,689	-	-	2,555	134	52	2,446	132
Pine Creek	3,056	764	1,206												
Spud Creek	6,328	1,582	-		614		738	82	-	1,920	2,640	240		569	
Split Hoof	-	9,140	-							-	6,935	365			
Thompson Creek	2,832	708	-	198	1,488	298									
Bald Mountain	-	9,238	3,772		126	103									
Squaw Creek	4,888	1,222	-	1,123	112	1,011									
East Fork	-	12,164	776	26	14	-							4,687	5,115	837
Sullivan Creek	40	2,974	1,006	120	598	89									
	24,648	106,206	19,241	6,601	23,772	4,301	738	12,271	7,768	4,785	164,997	8,937	4,976	10,052	969
Total Acres		150,095			34,674			20,777			178,719			15,998	
Percent of Total	17%	71%	12%	19%	69%	12%	4%	59%	37%	3%	92%	5%	31%	62%	6%

A/ Criteria for habitat condition classification can be found in Appendix.

B/ Much of the increased condition is due to the projected recovery of the winter kill on sagebrush that occurred in 1976-77.

in smaller streams would probably cause a small decrease in present populations of game fish where range conditions continue in a downward trend. Populations of non-game fish in tributary streams would be similarly affected by continuation of present grazing use.

Under this alternative most ranchers would stay in the livestock business. Retention of private lands along streams in agricultural production would benefit fish because adverse impacts associated with residential development would not occur.

Wild Horses

A limiting factor of maintaining the wild horse herd within the area (Map 2-14) is the winter range. Inventory data indicates that the area can support 340 wild horses. The present number of wild horses (586) is overstocking the winter range.

TABLE 8-8

PRESENT FORAGE REQUIREMENTS BY WILD HORSES
AND FORAGE PRODUCTION ON THE WILD HORSE RANGE

Allotment	Wild Horse Forage Requirements (AMUs)	Current Available Forage Production on Wild Horse Area (AUMs)
Red Lake	795	630
Road Creek	960	510
San Felipe/ Peck Canyon	1,935	1,230
Warm Springs	4,125	2,280
Split Hoof	615	240
Malm Gulch	360	210
	8,790	5,100

Table 8-8 indicates the wild horse range would be over grazed by 3,690 AUMs or about 246 animals. The quality and quantity of forage would decrease due to overgrazing and the range would be severely damaged (Daubenmire, 1968). The damaged range would eventually produce malnutrition die-offs and migration of horses to other habitat (Foote, Taber and Dasmann, 1971). Existing fences would deter free movement of the wild horses and could cause injuries or death from entanglement in barbed wire.

Spring, winter and fall grazing by livestock at the present stocking level would remove forage needed for wild horses. With the current stocking level of both wild horses and cattle, competition is very keen for forage. Over-utilization of the wild horse winter range would occur.

Continued deterioration of the wild horse winter range would result in die-off of wild horses unless they moved into new areas they have not historically used. Presently, the wild horse winter range can maintain an average of 340 animals. Continued overgrazing of the winter range would result in maintaining fewer animals as range deteriorates. It is predicted there would be about 300 wild horses in the Challis Unit after 15 years.

Livestock Grazing

After 15 years under this alternative, livestock grazing is predicted to be reduced from an average use of 17,444 (presently grazed) to 14,201 AUMs because of deterioration of the vegetation resource from overgrazing.

Economics

By 1995, assuming current trends continue, licensed use on the public land would average 14,201 AUMs in the Challis Unit. The population is expected to reach 4,817, and 1,989 persons would will be employed (Idaho Department of Water Resouses, 1976). The number of agricultural workers would decline by 13 percent from 1975 to 290. The number of government workers would increase by 64 percent from 1975. The increase would be mainly by state and local workers. There would be little change in the structure of ranch earnings.

After 15 years under this alternative the average net ranch annual income would be $5,980. This would total $227,240 for the 38 livestock operators.

Public Values and Attitudes

Without changes in the level of permitted grazing on public lands, livestock operators would probably develop slightly altered expectations regarding future availability of public grazing privileges. Less relaxed attitudes about maintenance of current levels of use would have been induced by recent discussion of the proposed action. Heightened uncertainty would influence operators' plans for the future in unpredictable fashion and degree.

The immediate emotional response of affected operators and the community would be relief and possibly a softening of resentment toward BLM based on the assumption their objections regarding the proposed action had influenced the decision. Choice of this alternative, combined with recently improved cattle prices, would be likely to generate a temporary mood of optimism in local residents.

Interested environmental and wild horse groups based outside the Challis area would probably react to a no action alternative with outrage. Instead of Custer County residents experiencing a disillusionment with government, these groups would be alienated.

Trends in Custer County which would probably have been accelerated by the proposed action would continue at a slower pace. Ranchers with scenic property would probably continue to reluctantly sell bits and pieces of land to to get them through the inevitable financial emergencies that afflict families from time to time. Assuming the demand for residential development continues, the area would probably continue to grow in population and change in character, but more gradually than with the proposed action. Slower changes would be easier for longtime residents to adjust to.

Unless industry comes to the area, an unlikely eventuality given its wilderness study potential, many young people would still have to go elsewhere to make a living. With continual high land prices, ranches coming up for sale would probably be bought by outsiders, more for recreational than economic livestock-raising purposes. Gradually, ranching in the area would probably be reduced to small-scale hobby-type operations rather than the full-time serious family business as they have been. This trend would accompany other changes in the Challis way of life which in sum would probably be viewed by current residents as the area's transformation to a "playground."

Over the long term it would be difficult for current residents to maintain the existing level of community cohesiveness and neighborly trust and cooperation in the context of projected developments. In sum, ongoing changes in the social life of the area which would be accelerated or intensified by the proposed action would probably occur anyway but more slowly and with less disruption to everyday life under the no action alternative.

Water

Water Use. Water consumption by livestock, wild horses, and wildlife under this alternative would be 8,764,205 gallons per year. This would be a decrease of 1,726,807 gallons per year below existing water consumption. The decrease is the result of reducing the number of large ungulates from the present level.

Streamflow. This alternative would have an unmeasurable effect on river levels in the unit. The ground water in the unit would be unaffected by this alternative.

Water Quality. The impacts of this alternative on water quality would be the same as the proposed action, the difference being the degree to which they occur. The estimated sediment yield resulting from this alternative is nearly one and two-thirds greater than estimated sediment yield of the proposed action. Therefore, those impacts resulting from the presence of suspended sediment would be expected to be intensified, while other impacts would remain fairly constant.

TABLE 8-9

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK,
WILD HORSES AND WILDLIFE UNDER ALTERNATIVE 1

Animal	Animal Months/ Year	Gallons per Animal/ Month	Total Gallons per Year
Livestock	17,444	300	5,233,200
Wild Horses	7,032	375	2,637,000
Deer	36,509	15	547,635
Antelope	2,870	30	86,100
Elk	1,557	150	223,550
Bighorn Sheep	612	60	36,720

Recreation

There would be no significant impact to the recreation resource as a result of the proposal in Alternative 1.

Cultural Resources

A continuation of present management would result in adverse impacts to cultural resources which were identified in Chapter 2. This would mean that 268 cultural sites and an unknown number of the estimated 750 cultural sites would continue to be disturbed by livestock grazing and related activities.

ELIMINATION OF LIVESTOCK AND WILD HORSE GRAZING
(ALTERNATIVE 2)

All livestock and wild horses would be removed from the public lands of the Challis area as administrated by BLM. The portion of the Herd Creek AMP in BLM land would be terminated. Domestic livestock trailing permits would be issued as necessary to allow livestock movement to or from National Forest lands, private and/or state-owned lands. State and private lands intermingled with public land would have to be fenced to keep livestock from trespassing on federal property. This would be the responsibility of the individual landowners.

No range improvements would be maintained or constructed unless necessary for other programs such as the wildlife program. Any range improvements, i.e., fences, which conflict with wildlife movement would be removed. There would be a continuation of other management functions in the area, guided by the management framework plan, i.e., those for timber, wildlife, minerals and recreation. Increased range supervision by BLM would be necessary to assure that operators adhere to conditions of trailing permits and that trespass does not occur. Administrative actions related to unauthorized use (trespass) would be taken in accordance with BLM Manual 9230.

The allocation of forage under this alternative would be as follows:

Livestock -	0
Wild Horses -	0
Wildlife -	7,772
	7,772

ANALYSIS OF IMPACTS

Vegetation

Implementation of this alternative would result in the discontinuance of grazing by livestock and wild horses. The vegetative species presently providing forage for these animals would have an opportunity to complete their life cycles without receiving heavy levels of grazing. They could store maximum food reserves, maintain high vigor, produce seed and increase in abundance. Greater quantities of vegetative litter would be incorporated into the soil increasing the fertility and productivity. Beneficial impacts of grazing such as seed trampling and stimulated vigor would not occur with this alternative. Allotment specific data concerning vegetative condition, trend and allowable AUM's is illustrated on Tables 8-10, 11, and 12.

A summary of the condition, trend, and available AUMs for the no grazing alternative is as follows:

Vegetation Condition	Present Acres	Future Acres	Percent Change
Good	33,815	126,642	+ 275
Fair	145,440	90,484	+ 38
Poor	103,567	65,696	- 37
Rock, Douglas-Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Trend In Condition	Present Acres	Future Acres	Percent Change
Up	12,790	149,303	+1,067
Down	72,977	570	- 99
Static	197,055	132,949	- 33
Rock, Douglas-Fir, Burned Areas	47,300	47,300	
Total	330,122	330,122	

Soils

Sediment Yield. This alternative, no grazing, would cut sediment yield after 15 years by over 60 percent, to 162,000 tons annually, or .49 tons/acre. This would be the firect result of increased plant and litter cover and reduced soil surface disturbance.

Periodic wildfires would be expected to occur and would probably burn large areas. This would occur by an accumulation of dry, ungrazed vegetation catching fire (lightning or man caused) and spreading rapidly because of the heavy supply of fuel. Once an area burns it may be revegetated by annual species such as cheatgrass. The rangeland then becomes a greater fire hazard because of this species' nature of drying about mid-summer and burning characteristics.

Burning would result in fluctuation of stream water quality and sediment production from the area. However, burning could also result in improved cover if brush species are replaced by natural grass species and would result in less sediment being produced in subsequent years.

Wildlife-Terrestrial

Beneficial and adverse impacts are discussed in Table 8-13. Predictions of wildlife replacement, losses, and displacement, as a result of this alternative, can be determined using Appendix 3-A, 3-B, and 3-C.

Wildlife-Aquatic

Elimination of livestock and wild horse grazing on public land would improve anadromous fish habitat condition from "fair" to "good" on 0.8 miles of Squaw Creek and 1.2 miles of Herd Creek.

TABLE 8-10

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE NO GRAZING ALTERNATIVE

Allotment	Current AUMs Available For Livestock	Future AUMs Available For Livestock
Red Lake	613	1,281
Herd Creek	1,411	1,411
Road Creek	346	823
Bruno Creek	85	251
Round Valley	438	932
San Felipe	3,484	8,787
Warm Springs	2,201	6,170
Garden Creek	600	1,378
Bald Mountain	296	482
Thompson Creek	51	72
Split Hoof	118	290
Squaw Creek	133	367
Spud Creek	202	648
Pine Creek	181	403
East Fork	192	430
Sullivan Creek	85	465
Malm Gulch	0	0
Total	10,436	24,190

TABLE 8-11

PRESENT VEGETATION CONDITION COMPARED TO FUTURE CONDITION AFTER FIFTEEN YEARS IF GRAZING IS DISCONTINUED BY LIVESTOCK AND WILD HORSES (ACRES)

	Present				No Grazing Alternative			
Allotment	Good	Fair	Poor	Rock/ Douglas-Fir/Burn	Good	Fair	Poor	Rock/ Douglas-Fir/Burn
Red Lake	2,186	9,217	8,251	3,541	10,018	4,361	5,275	3,541
Herd Creek	8,292	6,637	2,138	4,983	*	*	*	*
Road Creek	1,800	9,430	2,250	2,085	6,395	4,990	2,095	2,085
Bruno Creek	494	537	76	1,271	1,002	105	0	1,271
Round Valley	6,010	3,978	2,596	919	9,988	0	2,596	919
San Felipe	3,370	32,272	39,267	6,407	26,593	26,258	22,058	6,407
Warm Springs	5,063	36,513	15,839	2,288	38,613	13,662	5,140	2,288
Garden Creek	699	16,726	8,988	4,045	7,447	11,050	7,916	4,045
Bald Mountain	327	5,977	7,507	8,726	1,078	6,001	6,732	8,726
Thompson Creek	276	2,119	785	2,415	426	2,048	706	2,415
Split Hoof		5,153	2,759	503	2,583	2,753	2,576	503
Squaw Creek	760	1,036	2,651	2,597	1,075	2,121	1,251	2,597
Spud Creek	307	3,568	2,797	2,184	3,875	92	2,705	2,184
Pine Creek		3,903	559	564	1,349	2,554	559	564
East Fork	61	4,861	4,384	2,404	1,391	4,808	3,107	2,404
Sullivan Creek	4	1,383	512	1,671	1,387	572	0	1,671
Malm Gulch	4,166	2,130	2,208	692	*	*	*	*
Totals	33,815	145,440	103,567	47,300	126,642	90,484	65,696	47,300

* Indicates no change from the proposed action.

TABLE 8-12

PRESENT TREND IN VEGETATION CONDITION COMPARED TO FUTURE TREND AFTER FIFTEEN YEARS IF GRAZING BY LIVESTOCK AND WILD HORSES IS DISCONTINUED (ACRES)

ALLOTMENT	PRESENT				NO GRAZING ALTERNATIVE			
	UP	DOWN	STATIC	ROCK/DOUG. FIR/BURN	UP	DOWN	STATIC	DOUGLAS FIR, ROCK, AND BURN AREAS
Red Lake	0	3,630	16,024	3,541	10,808	0	8,846	3,541
Herd Creek	0	570	16,497	4,983	*	570	*	4,983
Road Creek	0	4,789	8,691	2,085	4,750	0	8,730	2,085
Bruno Creek	0	0	1,107	1,271	686	0	421	1,271
Round Valley	0	0	12,614	919	3,978	0	8,607	919
San Felipe	3,960	24,500	46,449	6,407	44,391	0	30,517	6,407
Warm Springs	0	23,450	33,965	2,288	48,548	0	8,867	2,288
Garden Creek	0	6,970	19,443	4,045	7,820	0	18,593	4,045
Bald Mountain	3,670	2,630	7,511	8,726	5,196	0	8,615	8,726
Thompson Creek	2,020	520	640	2,415	2,249	0	931	2,415
Split Hoof	0	2,600	5,312	503	2,769	0	5,143	503
Squaw Creek	0	650	3,797	2,597	1,715	0	2,732	2,597
Spud Creek	620	0	6,052	2,184	5,633	0	1,039	2,184
Pine Creek	0	0	4,462	564	1,349	0	3,113	564
East Fork	2,520	0	6,786	2,412	5,128	0	4,178	2,404
Sullivan Creek	0	1,648	250	1,672	1,898	0	0	1,672
Malm Gulch	0	1,020	7,425	691	2,385	0	6,120	691
Total	12,790	72,977	197,055	47,300	149,303	570	132,949	47,300

*Indicates no change from proposed action.

Habitat conditions would be expected to improve from "good" to "excellent" on sections of Bayhorse (0.15 miles), Herd (1.0 miles), Lake (0.4 miles), and Big Lake (0.9 miles) Creeks.

Grazing use by the present numbers of wildlife would lead to improved riparian vegetation conditions, increased streambank stability and reduced stream siltation. Anadromous fish production in the unit would increase as these changes improved spawning and rearing habitat. There is no way to quantify anadromous fish population increases that would result from this alternative. No improvement in Thompson, Big Boulder and Little Boulder Creeks would occur because livestock grazing on public lands has not degraded these streams.

Salmon and steelhead habitat in 7.4 miles of Herd Creek would improve significantly if livestock grazing is eliminated in the unit. Present annual spawning runs of 281 salmon and a few steelhead would increase to runs of 1,725 salmon and 1,725 steelhead if all stream habitat improved to an "excellent" condition. However, silt from upstream Forest Service lands would continue to degrade Herd Creek within the Challis Planning Unit. Heavy livestock use of 3.6 miles of private land along Herd Creek would continue to degrade habitat and decrease overall fish production in Herd Creek due to stream siltation and removal of riparian vegetation.

Habitat conditions on most resident trout streams (40.3 stream miles) that adjoin public land would improve following exclusion of livestock and wild horse grazing in the unit. Riparian vegetation recovery and streambank stabilization in small streams following implementation of this alternative would decrease siltation of spawning areas and would increase the carrying capacity of the streams for fish.

Fourteen miles of streams in the Road Creek drainage are in poor condition (Table 2-23). Poor aquatic habitat conditions in Road, Horse Basin, Mosquito and Bear Creeks would improve substantially if wild horse and livestock use of this drainage is stopped. Riparian vegetation would re-establish throughout the drainage, improving resident trout habitat. Present soil erosion rates would decrease (see soils section of this alternative), and stream siltation would correspondingly decrease. Downstream spawning and rearing habitat for anadromous fish in the main Salmon and East Fork Rivers would improve as Road Creek's contribution of silt to these rivers diminishes.

Cattle trailing across BLM lands to Forest Service grazing allotments would result in localized riparian vegetation and streambank damage. These small scale, temporary stream disturbances would have only a minor impact on fish habitat in the unit.

Increased grazing due to wildlife population increases within 15 years are not expected to adversely impact fish production in the unit.

TABLE 8-13

IMPACTS TO TERRESTRIAL WILDLIFE
NO LIVESTOCK OR WILD HORSE GRAZING
ALTERNATIVE 2

	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Allocation of Forage	No impacts would occur to present populations or IDF&G 15 year objectives. Quality and quantity of habitat on areas previously used by livestock and horses would increase with time. As carrying capacities are expected to increase over a period of time, population increases would be visble if IDF&G so desires.	→	→
Turnout Dates	Not applicable.	→	→
Grazing Systems	Not applicable.	→	→
Ecological Condition Change	Quality and quantity of habitat expected to increase for a time. As succession approaches climax, the carrying capacities would stabalize.	No significant impacts to present populations, but future carrying capacities are historic and present sheep range would increase.	Habitat conditions would increase as well as carrying capacities.
Social Interaction	Would be eliminated--physical encounters, forage competition and reduced stress to reproductive cycles are all beneficial impacts.	→	→

TABLE 8-13

IMPACTS TO TERRESTRIAL WILDLIFE
NO LIVESTOCK OR WILD HORSE GRAZING
ALTERNATIVE 2

	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Use of Riparian Zones by Livestock and Horses	Rapid increase in habitat quality especially in wet meadow areas.	Improved forage and cover in these areas would increase capacity for bighorn use in them. Improve overall habitat quality.	Increased forage, cover, brood rearing and nesting habitat. Increased habitat quality.
Elimination of Wild Horses and Livestock	Quality and quantity of habitat expected to improve. Improved carrying capacities would increase populations.	→	→
Water Development	Fenced caused mortality would be reduced.	→	→
Fences	Not applicable.	→	→
Brush Beating	Not applicable.	→	→
Plow and Seed	Not applicable.	→	→
Burning	Not applicable.	→	→
Land Development	Not applicable.	→	→

TABLE 8-13

IMPACTS TO TERRESTRIAL WILDLIFE
NO LIVESTOCK OR WILD HORSE GRAZING
ALTERNATIVE 2

	NON-GAME WILDLIFE	DEER	ELK
Use of Riparian Zones by Livestock and Horses	Same as impacts in allocation of forage (above) and ecological condition change, however, beneficial impacts would be accelerated and species diversity and populations associated with these areas would respond rapidly.	Same as allocation of forage (above). Increased use in these areas would be expected.	Increased calving habitat expected and may create yearlong use areas.
Elimination of Wild Horse and Livestock	Quality and quantity of habitat expected to improve. Improved carrying capacities would increase populations.	→	→
Water Development	Not applicable.	Fenced caused mortality would be reduced.	→
Fences	Not applicable.	→	→
Brush Beating	Not applicable.	→	→
Plow and Seed	Not applicable.	→	→
Burning	Not applicable.	→	→
Land Development	Not applicable.	→	→

TABLE 8-13

IMPACTS TO TERRESTRIAL WILDLIFE
NO LIVESTOCK OR WILD HORSE GRAZING
ALTERNATIVE 2

	NON-GAME WILDLIFE	DEER	ELK
Allocation of Forage	Beneficial impacts would occur to those wildlife associated with better ecological conditions. Adverse impacts would occur to those species associated with disclimax and poor ecological condition. Food, water and cover more readily available and would increase in quality and quantity. Increased habitat diversity and species diversity until advanced successional stages are reached, then stabilization would occur.	No impacts would occur to present populations or IDF&G 15 year objectives. Quality and quantity of habitat on areas previously used by livestock and horses would increase with time. As carrying capacities are expected to increase over a period of time, population increases would be viable if IDF&G so desires.	→
Turnout Dates	Not applicable.	→	→
Grazing Systems	Not applicable.	→	→
Ecological Condition Change	Species associated with poor ecological condition (vegetation) would be replaced by species associated with better ecological condition. Diversity would increase and then stabalize towards climax conditions.	As ecological conditions approach climax, deer winter habitat (forage and cover) would be reduced on present winter ranges. However, if expansion of present use areas occurs, future population would not decline and may increase.	Significant positive habitat response to better ecological conditions would occur. Increased areas of use would be expected. Duration of stay on public lands would be longer. Year-round elk use area would be created in some areas. Population increases viable in time if IDF&G so desires.
Social Interaction	Would be eliminated—physical encounters, forage competition and reduced stress to reproductive cycles are all beneficial impacts.	→	→

Elimination of livestock grazing on BLM administered lands would force some ranchers out of business. Accelerated subdivision and development of floodplain areas would adversely impact fisheries production in the unit, as outlined in Chapter 3.

Wild Horses

Removal of wild horses from the Challis Unit would totally eliminate this resource from habitat used by wild horses for about 100 years. Areas formerly used by wild horses would no longer be grazed.

Livestock Grazing

The common cow-calf operation in the Challis Unit depends upon public lands for spring grazing. Discontinuance of all livestock grazing on public lands would require livestock operators to buy, lease, or develop forage to compensate for the loss of forage. Since there is a wide variation in the percentage public lands grazing represents in individual livestock operations, there would be a correspondingly wide variation in adverse impacts. Probably some individuals could or would not adjust to the change and would choose to sell or lease their ranches. Other operators would probably cut back the size of their breeding stock until a modified yearlong operation could be developed. Individual livestock operations which presently have a high percent of public lands grazing as part of the total operation and those involving larger numbers of livestock would probably experience the greatest adverse impacts.

Several ranch units could be sold as a result of this alternative, but an estimate of how many cannot be made objectively.

Private and state-owned land leased for grazing surrounded by or adjacent to public lands would probably be unavailable for grazing or would require herding until the lands could be fenced. Fencing of the lands would be required to avoid unauthorized use of public lands.

Presently 17,444 AUMs are grazed annually in the unit. To supplement feed for this loss of grazing use would require 6,978 tons of hay.

Economics

The impacts associated with this alternative would be significant to Custer County; approximately 40 people would be out of work. This could mean a reduction in annual livestock income to over $500,000 (1972 income x 38 operators). There would be corresponding decreases in other sectors involving income and employment. There would be a potential for secondary reduction to county income of approximately $167,000.

Public Values and Attitudes

Most livestock operators who depend on BLM grazing privileges would probably be forced out of business under the no grazing alternative. Those whose property is attractive for residential purposes would probably sell to developers for subdivision. An inderminable number of current ranchers would migrate out of the area and attempt to start a new life on the proceeds of selling their property. Development of recreational and residential potential of the area would probably proceed more rapidly under this alternative than any other. The County would experience accelerated population growth and the daily life of the community would become more depersonalized and less cohesive. For those who have lived in the area all their lives the choices of selling out and moving away or remaining behind to experience rapid changes in the social character of the community would probably be very painful. Trends and impacts described under the proposed action would be intensified and accelerated by the no grazing alternative.

Water

Water Use. Water consumption by wildlife under this alternative would be 1,045,560 gallons per year. This would be a decrease of 9,445,452 gallons per year below existing water consumption. The decrease is the result of reducing the number of large ungulates from the present level.

Streamflow. This alternative would have an unmeasurable effect on river levels in the unit. Some smaller streams would experience an increased flow because of less consumption. This would only occur on those small streams adjacent to areas that previously had heavy animal concentrations. The groundwater in the unit would be unaffected by this alternative.

Water Quality. The impacts of this alternative will be the same as the proposed action, the difference being the degree to which they occur. The estimated sediment yield resulting from this alternative is almost one half of the estimated sediment yield of the proposed action. Therefore, those impacts resulting from the presence of sediment would be expected to be reduced, while other impacts would remain fairly constant.

TABLE 8-14

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK, WILD HORSES AND WILDLIFE UNDER ALTERNATIVE #2

Animal	Animal Months/Year	Gallons per Animal/Month	Total Gallons per Year
Deer	38,846	15	582,690
Antelope	3,926	30	117,780
Elk	1,683	150	252,450
Bighorn Sheep	1,544	60	92,640
			1,045,560 gallons/year

Recreation

The only significant impact that would occur as a result of the proposal in Alternative 2 is that there would be no wild horses to view.

Cultural Resources

Implementation of Alternative 2 would result in a significant decrease in adverse influences to cultural resources which were identified in Table 2, Chapter 2. Essentially, 268 cultural sites, and an unknown number of the estimated 740 unknown cultural properties, would no longer be disturbed by livestock grazing and related activities. Stabilized soil conditions resulting from revegetated areas would reduce adverse impacts to cultural properties.

Some disturbance to cultural sites could occur as a result of fencing private land to prevent trespass livestock grazing.

MINIMUM CONSTRAINTS ON LIVESTOCK GRAZING
(ALTERNATIVE 3)

This alternative maximizes livestock grazing within resource capability and policy constraints as developed in Step 1 of the MFP. The use levels for this alternative are shown in Table 8-15. Range improvements and vegetative manipulations required to implement this alternative are shown in Table 8-16.

Appendix 1 contains a brief explanation of the process and rationale used in developing this alternative through the MFP planning process.

Wild horse numbers would be controlled at an average level of 91 head. They would fluctuate between 75 and 114. A gathering program would be required every two years in order to maintain the herd at the average level.

ANALYSIS OF IMPACTS

Vegetation

Implementation of this alternative would result in an increase in use made by livestock and a decrease in the use made by wild horses and wildlife. This alternative would allocate 2,020 more AUMs to livestock than the proposed action. The major impact that would result from this alternative would be the increased utilization rates received by the desirable grazing areas. Those areas with gentle slopes and available water would provide the major portion of the 2,020 additional AUMs. The palatable vegetative species would receive increased levels of the following adverse impacts:

1. Decreased vigor
2. Decreased seed production
3. Decreased seedling establishment
4. Decreased litter accumulation

The beneficial aspects of spring rest afforded by the grazing systems would partially be negated by the increased forage utilization rates proposed in this alternative. Table 8-18, 19 and 20 show the results of this alternative on vegetation condition, trend, and AUMs available for livestock. All projections are based on conditions as they would occur after fifteen years under the minimum constraints to livestock alternative.

TABLE 8-15

ALLOCATION OF FORAGE TO GRAZING UNGULATES AND PROPOSED GRAZING TREATMENTS

Allotment	Domestic Livestock (Cattle)					Wild Horses		
	Class	Numbers	Season of Use*	AUMs	Specific Grazing System	Numbers	Season of Use	AUMs
Red Lake	Cattle	419	5/1 to 6/30	838	Seasonal	11	Yearlong	172
Herd Creek	Cattle	666	6/16 to 10/10	1,411	Rest-Rotation 3 Pasture			
Road Creek	Cattle	290	5/1 to 6/30	580	Seasonal	6	Yearlong	97
Bruno Creek	Cattle	29	5/16 to 9/30	130	Seasonal			
Round Valley	Cattle	234	5/1 to 6/30	469	Seasonal			
San Felipe/ Peck Canyon	Cattle	685	5/1 to 9/29	3,788	Rest-Rotation 3 Pasture	11	Yearlong	172
Warm Springs	Cattle	939	5/1 to 12/15	2,738	Rest-Rotation 5 Pasture	59	Yearlong	880
Garden Creek	Cattle	384	5/1 to 6/30	768	Rest-Rotation 4 Pasture			
Bald Mountain	Cattle	212	5/1 to 6/30	425	Rest-Rotation 3 Pasture			
Thompson Creek	Cattle	24	5/16 to 10/15	124	Deferred Rotation 3 Pasture			
Split Hoof	Cattle	100	5/1 to 6/30	201	Seasonal	4	Yearlong	60
Squaw Creek	Cattle	100	5/1 to 6/30	199	Deferred Rotation 2 Pasture			
Spud Creek	Cattle	118	5/1 to 6/30	236	Deferred Rotation 2 Pasture			
Pine Creek	Cattle	129	5/16 to 6/10 10/1 to 10/16	181	Seasonal			
East Fork	Cattle	127	5/1 to 6/30	254	Rest-Rotation 3 Pasture			
Sullivan Creek	Cattle	62	5/1 to 6/30	123	Seasonal			
Malm Gulch		0	None	0	No Grazing			
Total		4,518		12,456		91		1,381

* Does not necessarily reflect the total seeson of use, but rather depicts the main season of use.

Wildlife

Allotment	Elk			Deer			Antelope			Bighorn Sheep		
	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs
Red Lake				378	Winter/Spring	417	70 30	Winter Spr/Summer/Fall	38			
Herd Creek	20	Winter/Spring	38	500	Winter/Spring	552	65	Spr/Summer/Fall	31	11	Winter/Spring	11
Road Creek				361	Winter/Spring	399						
Bruno Creek	11	Winter/Spring	21	86	Winter/Spring	37						
Round Valley				40	Winter/Spring	44	150 58	Winter Spr/Summer/Fall	78			
San Felipe/ Peck Canyon	113	Winter/Spring	219	140 31	Winter/Spring Summer/Fall	154	506 270	Winter Spr/Summer/Fall	283			
Warm Springs				200	Winter/Spring	221	210 315	Winter Spr/Summer/Fall	219			
Garden Creek	34	Winter/Spring	21	748	Winter/Spring	825	33	Yearlong	27	56	Winter/Spring	58
Bald Mountain	10	Winter/Spring	19	850	Winter/Spring	937						
Thompson Creek				217	Winter/Spring	240						
Split Hoof				158	Winter/Spring	175	30	Spr/Summer/Fall	14			
Squaw Creek	26	Winter/Spring	50	236	Winter/Spring	262						
Spud Creek	4	Winter/Spring	8	215	Winter/Spring	236	120 15	Winter Spr/Summer/Fall	47	14	Winter/Spring	14
Pine Creek				124	Winter/Spring	137						
East Fork	5	Winter/Spring	10	249	Winter/Spring	274				48	Winter/Spring	50
Sullivan Creek	5	Winter/Spring	10	134	Winter/Spring	147	20	Spr/Summer/Fall	9			
Malm Gulch	0	None	0	0	None	0						
Total	228		396	4,636		5,057	1,089 836	Winter Spr/Summer/Fall	746	129		133

TABLE 8-16

PROPOSED RANGE IMPROVEMENTS AND VEGETATION MANIPULATIONS
ALTERNATIVE 3

ALLOTMENT (ACRES)	FENCING (MILES)	SPRING DEVELOPMENTS	WATER PIPELINES (MILES)	WATER TROUGHS	VEGETATION MANIPULATION		
					BRUSH BEAT (ACRES)	PLOW & SEED (ACRES)	BURN (ACRES)
Red Lake		6	2.5	4	1200		
Herd Creek	None	None	None	None	None	None	None
Road Creek	None	7	8	2	None	None	None
Bruno Creek	None	None	None	None	None	None	None
Round Valley	None	3	5	1	None	None	None
SanFelipe/Peck Canyon	24	7	11.5	10	8600	None	None
Warm Springs	11	7	5.5	5	7500	None	None
Garden Creek	4	None	7	5	1295	1510	None
Bald Mountain	4.75	None	3.7	3	1500	None	None
Thompson Creek	None	None	None	None	None	None	None
Split Hoof	6	6	None	None	330	None	None
Squaw Creek	1.5	1	None	None	650	None	None
Spud Creek	1.8	4	.3	None	5900	None	None
Pine Creek	None	5	None	None	None	None	None
East Fork	5	5	1	1	None	None	1000
Sullivan Creek	None	None	None	None	None	None	None
Malm Gulch	----	----	----	----	----	----	----
Total	58.05	51	44.5	31	26,975	1,510	1,000

Note: All projects would be implemented the first 5 years except for two brush-beating projects; 1,000 acres in the Warm Springs Allotment and 1,500 acres in the Bald Mountain Allotment, which would be accomplished in four treatments of one-fourth of the area at 3-year intervals; the entire project completed in 12 years.

A summary of the vegetation condition, trend, and suitability data for this alternative is as follows:

Vegetation Condition	Present Acres	Future Acres	Percent Change
Good	33,815	74,052	+119
Fair	145,440	116,281	- 20
Poor	103,567	92,489	- 11
Rock, Douglas Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Trend in Condition	Present Acres	Future Acres	Percent Change
Up	12,790	64,725	+406
Down	72,977	1,137	- 98
Static	197,055	216,960	+ 10
Rock, Douglas Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Range Improvements

Construction of range improvements would temporarily remove about 80 acres from production and permanently remove approximately 11 acres. Average recovery time would be approximately five years.

In addition to range improvement construction, there would be 29,485 acres initially disturbed by vegetation manipulations (see Table 8-17).

The overall impact of brush beating 26,975 acres would be a change in species composition toward more grass and forbs for livestock, wild horses and wildlife. The long-term impact would be an increase in forage production from about 90 pounds per acre to 120 pounds per acre. Range condition of these acres would be expected to improve one condition class.

Plowing and seeding of desirable grass, forbs and browse species on 1,510 acres would have a short-term impact from production for not more than eight years. The long-term impact is expected to increase production from approximately 60 pounds per acre to 250 pounds per acre, with vegetation density increasing 100 percent. Range condition would be expected to change to "good" condition. Increases would be primarily livestock and wild horse forage.

TABLE 8- 17

EXPECTED ACREAGE DISTURBED BY PROPOSED IMPROVEMENTS
ALTERNATIVE 3

Range Improvements	Unit	Total	Acres Disturbed per Unit Short-term a/	Acres Disturbed per Unit Long-term b/	Total Acres Disturbed Short-term a/	Total Acres Disturbed Long-term b/
Fencing	Miles	58.1	1	.002	58.1	1
Water Developments						
Spring Developments	No.	51	.2	.2	10.2	10.2
Water Pipelines	Miles	44.5	.2	-	8.9	-
Water Troughs	No.	31	.1	-	3.1	-
Brush Beat	Acres	26,975	1	-	26,975	-
Plow and Seed	Acres	1,510	1	-	1,510	-
Burn	Acres	1,000	1	-	1,000	-
Total					23,461.3	11.2

a/ Short-term means 5 years from start of project.

b/ Long-term means at least 15 years or the term of the proposed action.

TABLE 8-18

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE MINIMUM CONSTRAINTS TO LIVESTOCK ALTERNATIVE

Allotment	Current AUMs Available For Livestock	Future AUMs Available For Livestock
Red Lake	613	1,033
Herd Creek	1,411	1,411
Road Creek	346	296
Bruno Creek	85	62
Round Valley	438	516
San Felipe	3,484	5,617
Warm Springs	2,201	3,651
Garden Creek	600	893
Bald Mountain	296	356
Thompson Creek	51	32
Split Hoof	118	186
Squaw Creek	133	255
Spud Creek	202	201
Pine Creek	181	317
East Fork	192	299
Sullivan Creek	85	47
Malm Gulch	0	0
Total	10,436	15,172

TABLE 8-19

PRESENT VEGETATION CONDITION COMPARED TO FUTURE CONDITION AFTER FIFTEEN YEARS UNDER ALTERNATIVE 3 (ACRES)

	Present				Minimum Constraints on Livestock			
Allotment	Good	Fair	Poor	Rock/ Douglas-Fir/Burn	Good	Fair	Poor	Rock/ Douglas-Fir/Burn
Red Lake	2,186	9,217	8,251	3,541	6,078	6,804	6,772	3,541
Herd Creek	8,292	6,637	2,138	4,983	*	*	*	*
Road Creek	1,800	9,430	2,250	2,085	2,173	9,070	2,237	2,085
Bruno Creek	494	537	76	1,271	509	527	71	1,271
Round Valley	6,010	3,978	2,596	919	8,001	1,987	2,596	919
San Felipe	3,370	32,272	39,267	6,407	16,197	19,445	39,267	6,407
Warm Springs	5,063	36,513	15,839	2,288	17,988	29,875	9,552	2,288
Garden Creek	699	16,726	8,988	4,045	4,333	13,547	8,533	4,045
Bald Mountain	327	5,977	7,507	8,726	752	5,991	7,068	8,726
Thompson Creek	276	2,119	785	2,415	318	2,099	763	2,415
Split Hoof	--	5,153	2,759	503	748	4,458	2,706	503
Squaw Creek	760	1,036	2,651	2,597	957	1,713	1,777	2,597
Spud Creek	307	3,568	2,797	2,184	850	3,035	2,787	2,184
Pine Creek	--	3,903	559	564	*	*	*	*
East Fork	61	4,861	4,384	2,404	730	4,834	3,742	2,404
Sullivan Creek	4	1,383	512	1,671	4	816	1,079	1,671
Malm Gulch	4,166	2,130	2,208	692	*	*	*	*
Totals	33,815	145,440	103,567	47,300	74,052	116,281	92,489	47,300

* Indicates no change from the proposed action

TABLE 8-20

PRESENT TREND IN VEGETATION CONDITION COMPARED TO FUTURE TREND AFTER FIFTEEN YEARS IF ALTERNATIVE 3 IS IMPLEMENTED (ACRES)

ALLOTMENT	PRESENT				MINIMUM CONSTRAINTS ON LIVESTOCK			
	UP	DOWN	STATIC	ROCK/DOUG. FIR/BURN	UP	DOWN	STATIC	DOUGLAS FIR, ROCK AND BURN AREAS
Red lake	-0-	3,630	16,024	3,541	5,371	-0-	14,283	3,541
Herd Creek	-0-	570	16,497	4,983	*	*	*	*
Road Creek	-0-	4,789	8,691	2,085	386	-0-	13,094	2,085
Bruno Creek	-0-	-0-	1,107	1,271	20	-0-	1,087	1,271
Round Valley	-0-	-0-	12,614	919	1,991	-0-	10,594	919
SanFelipe	3,960	24,500	46,449	6,407	16,785	-0-	58,123	6,407
Warm Springs	-0-	23,450	33,965	2,288	19,212	-0-	38,203	2,288
Garden Creek	-0-	6,970	19,443	4,045	4,089	-0-	22,324	4,045
Bald Mountain	3,670	2,630	7,511	8,726	4,534	-0-	9,277	8,726
Thompson Creek	2,020	520	640	2,415	2,084	-0-	1,096	2,415
Split Hoof	-0-	2,600	5,312	503	801	-0-	7,111	503
Squaw Creek	-0-	650	3,797	2,597	1,071	-0-	3,376	2,597
Spud Creek	620	-0-	6,052	2,184	1,173	-0-	5,499	2,184
Pine Creek	-0-	-0-	4,462	564	*	*	*	*
East Fork	2,520	-0-	6,786	2,404	3,831	-0-	5,475	2,404
Sullivan Creek	-0-	1,648	250	1,672	-0-	1,722	176	1,672
Malm Gulch	-0-	1,020	7,425	691	*	*	*	*
Totals	12,790	72,977	197,055	47,300	64,725	1,137	216,960	47,300

* Indicates no change from the proposed action.

Burning would have a short-term impact of removing vegetation cover the first spring season after the treatment (1,000 acres). Long-term impact would be to change species composition toward more grass and forbs and an expected increase in forage production from approximately 120 pounds per acre to 140 pounds per acre. Range condition should change one class on the acreage receiving treatment.

Soils

Sediment Yield. Fifteen years under this alternative would increase vegetation and litter enough to change sediment yield from about 1.32 tons/acre (presently occurring unit wide) to an average of about .87 tons/acre or a reduction of about one-third per year. Total sediment yield for the Challis Unit under this alternative would be 288,000 tons.

Wildlife-Terrestrial

Beneficial and adverse impacts are discussed in Table 8-21. Predictions of wildlife replacement, losses and displacement, as a result of this alternative can be determined using Appendix 3-A, 3-B, and 3-C.

Wildlife-Aquatic

Relative to the proposed action, minimum constraints on livestock would decrease unitwide grazing by livestock, wild horses and wildlife (deer, elk, antelope, sheep) by 469 AUMs. The impacts of this alternative on aquatic habitat would be the same as in the proposed action, except in the Herd Creek drainage.

Continuation of the Herd Creek Allotment Plan with no provisions for fencing riparian-aquatic habitat would maintain Herd and Lake Creeks in their present "fair-good" condition. Habitat degradation caused by livestock and wildlife use of riparian areas in the Herd Creek watershed would continue to increase siltation of spawning gravels and reduce the carrying capacity of these streams for resident and anadromous fish. Annual spawning runs of 281 salmon and few steelhead in Herd Creek would remain constant.

Wild Horses

A change in numbers of wild horses from approximately 586 animals to approximately 91 animals would result in widely dispersed bands of wild horses. This could lead to significant breeding problems. Kirkpatrick (1978) indicates that in the Pryor Mountain Wild Horse Area a herd of 75 animals is the minimum number for breeding a healthy, viable herd. At the stocking level of 91 wild horses, this minimum level is being approached. Protecting Malm Gulch and Sand Hollow watershed from wild horse grazing would have no impact on the herd at the 91 wild horse level.

TABLE 8-21

IMPACTS TO TERRESTRIAL WILDLIFE
MAXIMUM LIVESTOCK GRAZING
ALTERNATIVE 3

	NON-GAME WILDLIFE	DEER	ELK
Use of Riparian Zones by Livestock and Horses	Impacts same as proposed action but adverse impacts intensified.	→	→
Reduction in Wild Horses	Adverse impacts same as proposed action but lessened.	Less impacts from social interaction and forage competition on winter and spring ranges. Less habitat stress.	Present adverse social conflicts would be minimized by displacement of horses presently in elk use areas. Increase in habitat quality.
Water Development	Same as proposed action.	→	→
Fences	Same as proposed action except including Spud Creek Allotment with adverse impacts.	Same as proposed action.	
Brush Beating	Same as proposed action.	Brush beating on Spud Creek would reduce a significant portion of crucial and general winter range. Carrying capacity would be reduced and stress to existing populations would result in lower population. Impacts the same as the proposed action on other areas.	Same as proposed action.
Plow and Seed	Same as proposed action.	No impact.	→
Burning	Same as proposed action.	→	→
Land Development	Not applicable.	Same as proposed action.	Not applicable.

TABLE 8-21

IMPACTS TO TERRESTRIAL WILDLIFE
MAXIMUM LIVESTOCK GRAZING
ALTERNATIVE 3

	NON-GAME WILDLIFE	DEER	ELK
Allocation of Forage	Impacts same as proposed action except accelerated adverse impacts in the bottomlands.	No immediate benefits or adverse impacts will occur to existing population trends or 15 year goals. Habitat quality and quantity would increase. However, long-term forage needs for IDF&G objectives would not be met. Habitat quality and quantity for long-term maintenance needs would be lacking.	→
Turnout Dates	Impacts same as proposed action.	Same as proposed action but adverse impacts intensified due to increased livestock numbers.	Same as proposed action.
Grazing Systems	Impacts same as proposed action except adverse impacts accelerated.	Same as proposed action except where habitat response to treatment is expected, beneficial impacts would be achieved at a slower rate.	→
Ecological Condition Change	Impacts same as proposed action except habitat increasing in condition would be slower and habitat in downward trend would be accelerated. Impacts would correspond accordingly.	→	→
Social Interaction	Same as proposed action except adverse impacts accelerated.	→	Same as proposed action.

TABLE 8-21

IMPACTS TO TERRESTRIAL WILDLIFE
MAXIMUM LIVESTOCK GRAZING
ALTERNATIVE 3

	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Use of Riparian Zones by Livestock and Horses.	Impacts same as proposed action but adverse impacts intensified.	Continued abuse of riparian zone along Marco Creek which discourages sheep use and limits habitat potential.	Same as proposed action but adverse impacts intensified due to increased livestock numbers.
Reduction in Wild Horses	Same as proposed action but beneficial impacts significantly increased.	No impact.	Same as proposed action except adverse impacts decreased.
Water Development	Same as proposed action.	→	→
Fences	Same as proposed action.	No impact.	→
Brush Beating	Brush beating in Spud Creek would eliminate a significant portion of the antelope habitat most of which is crucial habitat. Populations would be drastically reduced. Impacts on other areas would be the same as the proposed action.	No impact.	Same as proposed action.
Plow and Seed	No impact.	→	→
Burning	Same as proposed action.	→	→
Land Development	Same as proposed action.	→	No impact.

TABLE 8- 21

IMPACTS TO TERRESTRIAL WILDLIFE
MAXIMUM LIVESTOCK GRAZING
ALTERNATIVE 3

	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Allocation of Forage	No immediate benefits or adverse impacts will occur to existing population trends or 15 year goals. Habitat quality and quantity would increase. However, long-term forage needs for IDF&G objectives would not be met. Habitat quality and quantity for long-term maintenance needs would be lacking.	→	→
Turnout Dates	Same as proposed action.	→	→
Grazing Systems	Same as proposed action except where habitat response to treatment is expected, beneficial impacts would be achieved at a slower rate.	Continued livestock grazing on bighorn sheep range will significantly reduce population potential. Short-term beneficial impacts the same as proposed action. Adverse impacts from social interaction and forage competition would occur in Marco Creek.	Same as proposed action.
Ecological Condition Change	Same as proposed action.	Same as for non-game, deer, elk.	Same as proposed action but beneficial impacts somewhat less and adverse impact slightly increased due to more livestock.
Social Interaction	Same as proposed action.	Social conflicts with livestock would occur, reducing viability and habitat quality.	Same as proposed action.

Implementation of rest-rotation systems for livestock grazing management, installation of range improvement projects and vegetation manipulation projects would have the same kinds of impacts on the proposed action. It is impossible to quantify the difference in intensity of impact, but the higher level of grazing by livestock in this alternative would indicate competition for forage on the winter range would be greater.

Livestock Grazing

Implementation of Alternative 3 would significantly affect livestock operations in the Challis Unit. Impacts to the livestock operators concerning adjustment in AUMs of use are displayed and discussed in the Socio-Economic section.

Establishment of Alternative 3 season of use (Table 8-22) would cause six of the total 38 operators to be restricted from both summer and fall grazing currently allowed. Six would no longer be allowed summer grazing, two would no longer be allowed fall grazing and one would have the winter season shortened one month.

The seasonal restriction from current use of the public lands would require these 15 livestock operators to adjust their total operation.

To compensate reductions of AUMs and loss of grazing on public lands primarily in spring, summer, and fall, livestock operators would either have to buy hay, lease pasture, or reduce numbers.

After 15 years under this alternative there would be increased production of forage as a result of better management of the range. This would amount to 2,716 AUMs that could be allocated to livestock. At the time additional forage is determined available for grazing use, an allocation would be made to grazing animals through the BLM planning system. For purposes of analysis, these 2,716 AUMs are considered for livestock use in the future.

Initial stocking rate	12,456 AUMs
Increased production after 15 years	2,716 AUMs
	15,172 AUMs

This would be 87 percent of the current eight years average use.

TABLE 8-22

CHANGE IN TOTAL AUMs AND CATTLE NUMBERS
RESULTING FROM ALTERNATIVE 3, CHALLIS UNIT

Present Use		Alternative 3 Level of Use		Change Resulting From Alternative 3	
AUMs	Cattle Numbers	AUMs	Cattle Numbers	AUMs	Cattle Numbers
17,444	7,700	12,456	4,158	4,988	3,542

If the forage (4,988 AUMs) identified in Table 8-22 were replaced by hay, it would require 1,995 tons annually.

There is very little irrigated or dry pasture available to lease in the Challis area. The only alternative for many of the range users may be to reduce their herds. It is impossible to predict the change in number of cattle raised in Custer County as a result of Alternative 3 because of the difference in capability of each operator to adjust his livestock operation. The change would probably be something less than the 3,542 cattle number in Table 8-22.

Economics

Under the maximum livestock stocking level for Alternative 3, the ranchers would experience a 131 AUM decrease, on the average (for purposes of theses calculations, the largest operator has been excluded so the distribution would not be skewed). The following tables show the economic impacts of buying hay, grazing on private land and changing herd size for the average rancher.

The average rancher would have to spend $2,600 for buying hay to supplement the AUM loss, $786 for grazing on private land to supplement AUM loss or lose $5,300 of income by reducing his herd size. Annual income loss for all 38 livestock operators could total $207,000.

Potential secondary annual reduction to Custer County income could be approximately $69,000.

After 15 years under this alternative net annual income to the average ranchers would be -$4,474. This would total -$170.012 for the 38 ranch operators.

Public Values and Attitudes

The social impacts resulting from this alternative are the same in kind as the proposed action. Variation is in intensity and this cannot be quantified.

Water

Water Resources. Water consumption by livestock, wild horses and major wildlife is estimated to be 4,964,055 gallons per year under this alternative. This would be a decrease of 5,526,957 gallons, excluding evaporation, from the present water use levels (Table 2-31). The decrease in water consumption is due to a decrease in the numbers of grazing animals presently grazing the planning unit. This would result in 5,526,957 gallons of surplus water for other consumptive uses.

TABLE 8-23

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ALTERNATIVE 3
GRAZING ON PRIVATE LAND

	Average per Ranch 1975
Returns	
Sale of Calves	$18,509
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	27,073
Expenses	
Land Rent	400
Feed	6,646
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	30,736
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-3,663
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-1,730

TABLE 8- 24

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ALTERNATIVE 3
BUYING OF HAY

	Average per Ranch 1975
Returns	
Sale of Calves	$18,509
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	27,073
Expenses	
Land Rent	400
Feed	8,460
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	32,550
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-5,477
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-3,544

TABLE 8- 25

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ALTERNATIVE 3
HERD REDUCTION

	Average per Ranch 1975
Returns	
Sale of Calves	$13,221
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	21,755
Expenses	
Land Rent	400
Feed	5,860
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	29,950
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-8,195
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-6,262

TABLE 8-26

ECONOMIC IMPACTS OF ALTERNATIVE 3 ON RANCHERS IN THE CHALLIS ES AREA

OPERATOR	ACTIVE AUMs	AVERAGE AUMs	PROPOSED AUMs	LOSS FROM ACTIVE	PERCENTAGE LOSS	LOSS FROM AVERAGE	PERCENTAGE LOSS	DEPENDENCY ON BLM AUMs
Baker, Eddie	290	283	146	144	-49.66	137	-48.41	8.05
Baker, Richard	213	209	108	105	-49.30	101	-48.33	7.24
Bennetts, Jim	135	135	135	0	0.00	0	0.00	11.23
Bishop, Laura	358	346	204	154	-43.02	142	-41.04	27.07
Bradshaw, Eugene	57	56	65	-8	14.04	-9	16.07	15.73
Bradshaw, Kenneth	172	119	158	14	-8.14	-39	32.77	25.50
Carlisle, Lewis	539	228	234	305	-56.59	-6	2.63	35.88
Chivers, Garth	278	16	161	117	-42.09	-145	906.25	15.42
Cominotti, Fabio	264	246	100	164	-62.12	146	-59.35	11.45
Corrigan, Dick	88	78	44	44	-50.00	34	-43.59	14.97
Cutler, Howard	180	148	89	91	-50.56	59	-39.86	11.52
Ennis, Mrs. James L	134	127	130	4	-2.99	-3	2.36	31.72
Hammond, John	183	147	84	99	-54.10	63	-42.86	12.69
Hammond, Robert	38	17	25	13	-34.21	-8	47.06	12.57
Hanson, Margaret	465	333	220	245	-52.69	163	-42.56	15.99
Helm, Calvin	104	39	52	52	-50.00	-13	33.33	7.86
Horning, Tim	24	9	11	13	-54.17	-2	22.22	24.39
Ingram, Will	5,542	4,521	3,979	1,563	-28.20	542	-11.99	24.83
Jan Mar Corp.	904	385	395	509	-56.31	-10	2.60	30.11
Keppner, Ray	230	199	106	124	-53.91	93	-46.73	7.66
Laverty, Ray	141	1	71	70	-49.65	-70	100	12.47
Leuzinger, George	65	41	60	5	-7.69	-19	46.34	7.72
Leuzinger, Jake & Son	186	145	81	105	-56.45	64	-44.14	20.61
Maraffio, Frank	300	226	192	108	-36.00	34	-15.04	14.27
Peck, Joseph	262	72	120	142	-54.20	-48	66.67	39.55
Pedrini Brothers	181	181	181	0	0.00	0	0.00	11.58
Philps, Ethel	155	136	71	84	-54.19	65	-47.79	3.78
Piva Brothers	413	337	208	205	-49.64	129	-38.28	4.92
Pleus, Herman	50	25	57	-7	14.00	-32	128.00	13.30
San Felipe Ranch	8,375	7,396	3,788	4,587	-54.77	3,608	-48.78	23.26
Sherwood, Archie	55	45	49	6	-10.91	-4	8.89	11.34
Smith, Kenneth	55	36	25	30	-54.55	11	-30.56	14.68
Stark, Kenneth	15	9	7	8	-53.33	2	-22.22	4.14
Stevens, Robert	29	7	13	16	-55.17	-6	85.71	4.01
Westgard, Gean	240	48	160	80	-33.33	-112	233.33	7.99
Westgard, Golden	155	155	104	51	-32.90	51	-32.90	3.23
Wooley, Dan	552	429	388	164	-29.71	41	-9.56	25.27
Yates, Ralph	473	467	441	32	-6.77	26	-5.57	15.33
Totals	21,900	17,447	12,462	9,433		4,985		

TABLE 8-27

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK, WILD HORSES AND WILDLIFE UNDER ALTERNATIVE #3

Animal	Animal Months/Year	Gallons per Animal/Month	Total Gallons per Year
Livestock	12,456	300	3,736,800
Wild Horses	1,092	375	409,500
Deer	31,859	15	477,885
Antelope	3,581	30	107,430
Elk	1,188	150	178,200
Bighorn Sheep	904	60	54,240
			4,964,055 Gallons/Year

Streamflow. This alternative would have an unmeasurable effect on streamflow in perennial streams within or downstream from the Challis Planning Unit. Storm runoff is expected to decrease slightly below the existing levels in the planning unit. This decrease is due to increased infiltration rates under intensive range management, and a projected long-term increase in vegetative cover. Impacts related to streamflow are the same as the proposed action.

Water Quality. See Proposed Action for analysis as impacts are the same.

Recreation

There will be no significant impact to the recreation resource as a result of the proposal in Alternative 3.

Cultural Resources

Damage and destruction would continue to occur at known cultural resource sites (268 sites). This would continue until the proposed cultural resource management activity plan could be initiated. These sites are unique and vulnerable to all levels of ground-disturbing activities, including trampling by livestock and streambank and gully erosion.

Damage to unknown sites and subsurface sites not discovered during project surveillance would be almost certain to occur. In cases where salvage mitigation is required, the impact would not be fully mitigated. Salvage of cultural resources is an unavoidable adverse impact. Once excavated, a site is effectively destroyed and removed from future research considerations which may utilize new techniques. Salvage is rarely as effective as non-salvage research programs, partially because of time limitations, funding and personnel competence. Emergency salvage, required by unexpected discoveries during project initiations, would be even less effective.

Reduction in the rate of soil erosion resulting from Alternative 3 would cause a slower rate of damage to most of the cultural resources. The level of stocking of livestock and wild horses would result in less trampling damage to the resource than is occurring under present conditions.

MINIMUM CONSTRAINTS ON WILDLIFE
(ALTERNATIVE 4)

This alternative maximizes the wildlife resource within resource capability and policy constraints as developed in Step 1 of the MFP. The use levels for this alternative are shown in Table 8-28. Range improvements and vegetation manipulation required to implement this alternative are shown on Table 8-29.

Appendix 1 contains a brief explanation of the process and rationale used in developing this alternative through the MFP planning process.

Wild horse numbers would be controlled at an average level of 141 head. They would fluctuate between 100 and 176. A gathering program would be required every three years in order to maintain the herd at the average level.

Livestock and wild horse use would be eliminated in the Horse Basin and Corral Basin watershed (20,352 acres) for the benefit of the anadromous fish habitat in the Road Creek drainage. A total of 24.9 miles of streams (3.8 miles along Herd Creek; 4 miles along Lake Creek; and 17.1 miles along Road Creek, including tributaries of Mosquito and Bear Creek) would be fenced to protect the anadromous fish habitat. Turnout dates for livestock would be no earlier than June 15. Livestock grazing would be eliminated in the bighorn sheep winter ranges (15,998 acres) in the East Fork Allotment. No livestock water would be developed in 2,291 acres of elk crucial winter range in the San Felipe/Peck Canyon Allotment.

ANALYSIS OF IMPACTS

Vegetation

Implementation of this alternative would allocate the same number of AUMs to wildlife as the proposed action. However, the number of AUMs allocated to livestock and wild horses would be reduced. A total of 20,352 acres would be protected from livestock and wild horse use in the Horse Basin and Corral Basin watersheds. About 16,000 acres would be protected from livestock grazing on the bighorn sheep winter ranges. About 25 miles of streams would be fenced on Herd Creek, Lake Creek, and Road Creek. The vegetation in those areas protected from grazing by livestock and wild horses would respond in the following ways:

1. Vigor would be increased
2. Seed production would be increased
3. Seedling establishment would be improved
4. Accumulation of litter would be increased

Livestock grazing on the remainder of the ES area would be allowed only after June 15th each year. This would eliminate all impacts (as identified in Chapter 3) that would occur as a result of turning livestock into the allotments prior to the range readiness date. A June 15th turnout date would allow the key forage plants to meet their physiological requirements and store adequate quantities of carbohydrate reserves. This would tend to develop a healthy stand of desirable native vegetation and would ultimately result in increased forage production. Tables 8-31, 8-32 and 8-33 illustrate the predicted changes in vegetative condition, trend, and availability of AUMs after 15 years under Alternative 4.

A summary of the condition, trend, and available AUMs for this alternative is as follows:

Vegetation Condition	Present Acres	Future Acres	Percent Change
Good	33,815	102,000	+202
Fair	145,440	110,714	- 24
Poor	103,567	70,108	- 32
Rock, Douglas-Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Trend in Condition	Present Acres	Future Acres	Percent Change
Up	12,790	113,589	+788
Down	72,977	570	- 99
Static	197,055	168,663	- 14
Rock, Douglas-Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Range Improvements

Construction of range improvements would temporarily remove about 114 acres from production and permanently remove approximately 11 acres. Average recovery time would be approximately five years. In addition to range improvement construction, there would be 23,385 acres initially disturbed by vegetation manipulations (see Table 8-30).

TABLE 8-28

ALLOCATION OF FORAGE TO GRAZING UNGULATES AND PROPOSED GRAZING TREATMENTS

	Domestic Livestock (Cattle)					Wild Horses		
Allotment	Class	Numbers	Season of Use	AUMs	Specific Grazing System	Numbers	Season of Use	AUMs
Red Lake	Cattle	307	6/16 to 8/15	613	Seasonal	22	Season Long	330
Herd Creek	Cattle	666	6/16 to 10/10	1,411	Rest-Rotation 3 Pasture	18	Season Long	270
Road Creek	Cattle	173	6/16 to 8/15	346	Seasonal			
Bruno Creek	Cattle	19	6/16 to 10/30	85	Seasonal			
Round Valley	Cattle	219	6/16 to 8/15	438	Seasonal	20	Season Long	300
San Felipe/ Peck Canyon	Cattle	519	6/16 to 11/15	2,868	Rest-Rotation 3 Pasture			
Warm Springs	Cattle	614	6/16 to 1/30	1,790	Rest Rotation 6 Pasture	72	Season Long	1,095
Garden Creek	Cattle	300	6/16 to 8/15	600	Rest Rotation 4 Pasture			
Bald Mountain	Cattle	148	6/16 to 8/15	296	Rest Rotation 3 Pasture			
Thompson Creek	Cattle	10	6/16 to 11/15	51	Deferred Rotation 3 Pasture*	8	Season Long	120
Split Hoof	Cattle	59	6/16 to 8/15	118	Seasonal			
Squaw Creek	Cattle	67	6/16 to 8/15	133	Deferred Rotation 2 Pasture			
Spud Creek	Cattle	88	6/16 to 8/15	177	Deferred Rotation 2 Pasture			
Pine Creek	Cattle	129	6/16 to 7/15 10/1 to 10/16	181	Seasonal			
East Fork	Cattle	0	None	0	None			
Sullivan Creek	Cattle	43	6/16 to 8/15	95	Seasonal			
Malm Gulch	Cattle	0	None	0	None			
Total		3,361		9,202		141		2,115

* One of the lower two pastures would be rested each year.
The upper pasture will be grazed after seed ripe each year.

	Elk			Deer			Antelope			Bighorn Sheep		
Allotment	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs
Red Lake				450	Winter/Spring	496	70 30	Winter Spr/Summer/Fall	38			
Herd Creek	10	Winter/Spring	38	500	Winter/Spring	552						
Road Creek	2	Winter/Spring	4	425	Winter/Spring	469	65	Spr/Summer/Fall	31	30	Winter/Spring	31
Bruno Creek	16	Winter/Spring	31	125	Winter/Spring	54						
Round Valley				50	Winter/Spring	55	150 58	Winter Spr/Summer/Fall	78			
San Felipe/ Peck Canyon	140	Winter/Spring	271	175 (39)	Winter/Spring Summer/Fall	239	570 333	Winter Spr/Summer/Fall	349			
Warm Springs				200	Winter/Spring	221	210 315	Winter Spr/Summer/Fall	219			
Garden Creek	40	Winter/Spring	25	1,025	Winter/Spring	1,130	40	Yearlong	33	80	Winter/Spring	83
Bald Mountain	10	Winter/Spring	19	1,000	Winter/Spring	1,102						
Thompson Creek	38	Winter/Spring	73	250	Winter/Spring	276						
Split Hoof				200	Winter/Spring	221	30	Spr/Summer/Fall	14			
Squaw Creek	36	Winter/Spring	70	284	Winter/Spring	316						
Spud Creek	5	Winter/Spring	10	290	Winter/Spring	319	120 15	Winter Spr/Summer/Fall	47	25	Winter/Spring	25
Pine Creek				200	Winter/Spring	221						
East Fork	5	Winter/Spring	10	300	Winter/Spring	330				85	Winter/Spring	88
Sullivan Creek	5	Winter/Spring	10	150	Winter/Spring	165	20	Spr/Summer/Fall	9			
Malm Gulch												
Total	317		561	5,624		6,166	1,160 906	Winter Spr/Summer/Fall	818	220		227

TABLE 8-29

PROPOSED RANGE IMPROVEMENTS AND VEGETATION MANIPULATIONS
ALTERNATIVE 4

					VEGETATION MANIPULATION		
ALLOTMENT (ACRES)	FENCING (MILES)	SPRING DEVELOPMENTS	WATER PIPELINES (MILES)	WATER TROUGHS	BRUSH BEAT (ACRES)	PLOW & SEED (ACRES)	BURN (ACRES)
Red Lake		6	2.5	4	1200		
Herd Creek	11.8	None	None	None	None	None	None
Road Creek	None	7	8	2	None	None	None
Bruno Creek	None	None	None	None	None	None	None
Round Valley	None	3	5	1	None	None	None
SanFelipe/Peck Canyon	50	7	11.5	10	8600	None	None
Warm Springs	11	6	5.5	5	7500	None	None
Garden Creek	4	None	7	5	1295	1310	None
Bald Mountain	4.75	None	3.7	3	1500	None	None
Thompson Creek	None	None	None	None	None	None	None
Split Hoof	6	6	None	None	330	None	None
Squaw Creek	1.5	1	None	None	650	None	None
Spud Creek	1.8	4	.3	None	None	None	None
Pine Creek	None	5	None	None	None	None	None
East Fork	1	5	1	1	None	None	1000
Sullivan Creek	None	None	None	None	None	None	None
Malm Gulch	----	----	----	----	----	----	----
Total	91.9	50	44.5	31	21,075	1,310	1,000

Note: All projects would be implemented the first 5 years except for two brush-beating projects; 1,000 acres in the Warm Springs Allotment and 1,500 acres in the Bald Mountain Allotment, which would be accomplished in four treatments of one-fourth of the area at 3-year intervals; the entire project completed in 12 years.

TABLE 8-30

EXPECTED ACREAGE DISTURBED BY PROPOSED IMPROVEMENTS
ALTERNATIVE 4

Range Improvements	Unit	Total	Acres Disturbed per Unit Short-term a/	Acres Disturbed per Unit Long-term b/	Total Acres Disturbed Short-term a/	Total Acres Disturbed Long-term b/
Fencing	Miles	91.9	1	.002	91.9	2
Water Developments						
Spring Developments	No.	50	.2	.2	10	10
Water Pipelines	Miles	44.5	.2	-	8.9	-
Water Troughs	No.	31	.1	-	3.1	-
Brush Beat	Acres	21,075	1	-	21,075	-
Plow and Seed	Acres	1,310	1	-	1,310	-
Burn	Acres	1,000	1		1,000	-
Total					23,498.9	12

a/ Short-term means 5 years from start of project.

b/ Long-term means at least 15 years or the term of the proposed action.

TABLE 8-31

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE MINIMUM CONSTRAINTS TO WILDLIFE ALTERNATIVE

Allotment	Current AUMs Available For Livestock	Future AUMs Available For Livestock
Red Lake	613	1,283
Herd Creek	1,411	1,411
Road Creek	346	805
Bruno Creek	85	198
Round Valley	438	690
San Felipe	3,484	6,652
Warm Springs	2,201	5,676
Garden Creek	600	1,166
Bald Mountain	296	450
Thompson Creek	51	64
Split Hoof	118	286
Squaw Creek	133	347
Spud Creek	202	371
Pine Creek	181	353
East Fork	192	430
Sullivan Creek	85	232
Malm Gulch	0	0
Total	10,436	20,369

TABLE 8-32

PRESENT VEGETATION CONDITION COMPARED TO FUTURE CONDITION AFTER FIFTEEN YEARS IF ALTERNATIVE FOUR IS IMPLEMENTED (ACRES)

	Present				Minimum Constraints on Wildlife			
Allotment	Good	Fair	Poor	Rock/ Douglas-Fir/Burn	Good	Fair	Poor	Rock/ Douglas-Fir/Burn
Red Lake	2,186	9,217	8,251	3,541	7,850	5,705	6,099	*
Herd Creek	8,292	6,637	2,138	4,983	*	*	*	*
Road Creek	1,800	9,430	2,250	2,085	4,179	7,131	2,170	*
Bruno Creek	494	537	76	1,271	711	396	0	*
Round Valley	6,010	3,978	2,596	919	8,642	1,346	2,596	*
San Felipe	3,370	32,272	39,267	6,407	20,246	27,901	26,762	*
Warm Springs	5,063	36,513	15,839	2,288	31,179	23,099	3,137	*
Garden Creek	699	16,726	8,988	4,045	6,108	12,177	8,128	*
Bald Mountain	327	5,977	7,507	8,726	983	5,999	6,829	*
Thompson Creek	276	2,119	785	2,415	407	2,057	716	*
Split Hoof	--	5,153	2,759	503	1,960	3,332	2,620	*
Squaw Creek	760	1,036	2,651	2,597	1,055	2,057	1,335	*
Spud Creek	307	3,568	2,797	2,184	1,985	1,921	2,766	*
Pine Creek	--	3,903	559	564	1,141	2,762	559	*
East Fork	61	4,861	4,384	2,404	1,391	4,808	3,107	*
Sullivan Creek	4	1,383	512	1,671	741	854	304	*
Malm Gulch	4,166	2,130	2,208	692	*	*	*	*
Totals	33,815	145,440	103,567	47,300	102,000	110,714	70,108	*

* Indicates no change from proposed action.

TABLE 8-33

PRESENT TREND IN VEGETATION CONDITION COMPARED TO FUTURE TREND AFTER FIFTEEN YEARS IF ALTERNATIVE FOUR IS ADOPTED (AUMs)

ALLOTMENT	PRESENT				MINIMUM CONSTRAINTS ON WILDLIFE			
	UP	DOWN	STATIC	ROCK/DOUG FIR /BURN	UP	DOWN	STATIC	DOUGLAS FIR;ROC AND BURN AREA
Red lake	-0-	3,630	16,024	3,541	7,816	-0-	11,838	*
Herd Creek	-0-	570	16,497	4,983	*	*	*	*
Road Creek	-0-	4,789	8,691	2,085	2,459	-0-	11,021	*
Bruno Creek	-0-	-0-	1,107	1,271	293	-0-	814	*
Round Valley	-0-	-0-	12,614	919	2,632	-0-	9,952	*
SanFelipe	3,960	24,500	46,449	6,407	32,341	-0-	42,568	*
Warm Springs	-0-	23,450	33,965	2,288	38,918	-0-	18,497	*
Garden Creek	-0-	6,970	19,443	4,045	6,269	-0-	20,144	*
Bald Mountain	3,670	2,630	7,511	8,726	5,004	-0-	8,807	*
Thompson Creek	2,020	520	640	2,415	2,220	-0-	960	*
Split Hoof	-0-	2,600	5,312	503	2,099	-0-	5,813	*
Squaw Creek	-0-	650	3,797	2,597	1,611	-0-	2,836	*
Spud Creek	620	-0-	6,052	2,184	2,329	-0-	4,343	*
Pine Creek	-0-	-0-	4,462	564	1,141	-0-	3,321	*
East Fork	2,520	-0-	6,786	2,404	5,128	-0-	4,178	*
Sullivan Creek	-0-	1,648	250	1,672	945	-0-	954	*
Malm Gulch	-0-	1,020	7,425	691	*	*	*	*
Totals	12,790	72,977	197,055	47,300	113,589	570	168,663	47,300

* Indicates no change from the proposed action.

The overall impact of brush beating 21,075 acres would be a change in species composition toward more grass and forbs for livestock, wild horses and wildlife. The long-term impact would be an increase in forage production from about 90 pounds per acre to 120 pounds per acre. Range condition of these acres would be expected to improve one condition class.

Plowing and seeding of desirable grass, forbs and browse species on 1,310 acres would have a short-term impact from production for not more than eight years. The long-term impact is expected to increase production from approximately 60 pounds per acre to 250 pounds per acre, with vegetative density increasing 100 percent. Range condition would be expected to change to "good" condition. Increases would be primarily livestock and wild horse forage.

Burning would have a short-term impact of removing vegetative cover the first spring season of the burning (1,000 acres). Long term impact would be to change species composition toward more grass and forbs and an expected increase in forage production from approximately 120 pounds per acre to 140 pounds per acre. Range condition should change one class on the acreage receiving treatment.

Soils

Sediment Yield. Increased plant and litter cover from 15 years of this alternative would change sediment yield from about 1.32 (presently occurring unitwide) to an average .84 tons per acre, a reduction of approximately 36 percent per year. Total sediment yield for the Challis Unit under this alternative would be 278,000 tons.

Wildlife-Terrestrial

Beneficial and adverse impacts are discussed in Table 8-34. Predictions of wildlife replacement, losses and displacement, as a result of this alternative can be determined using Appendix 3-A, 3-B, and 3-C.

Wildlife-Aquatic

Minimum constraints on wildlife would decrease unitwide grazing by livestock, wild horses and wildlife (deer, elk, antelope, sheep) by 1,549 AUMs per year. The impacts of this alternative on aquatic habitat would be the same as in the proposed action, except where stream protection would be accomplished by excluding livestock and wild horses from riparian areas in the Herd and Road Creek watersheds.

TABLE 8-34

IMPACTS TO TERRESTRIAL WILDLIFE
MINIMUM CONSTRAINTS ON WILDLIFE
ALTERNATIVE 4

	NON-GAME WILDLIFE	DEER	ELK
Allocation of Forage	Same as proposed action except in Horse Basin and Corral Basin non-game habitat would improve as well as species diversity. Fencing fish habitat would greatly improve non-game habitat in riparian zones.	Same as proposed action.	→
Turnout Dates	Very significant beneficial impacts would occur. All essential habitat requirements for spring habitat would be enhanced significantly. Significant accelerated improvement of habitat condition on a long-term basis would occur due to lack of spring grazing by livestock and horses.	Eliminate competition for early green-up. Stress to pregnant and lactating does reduced. Increase significant spring habitat quality and quantity, long-term and short-term.	Eliminate current livestock/elk competition for forage and social interaction during spring. Increase winter and spring carrying capacity. Decrease stress to pregnant and lactating cow elk and migrating elk recovering from winter stresses.
Grazing Systems	Vegetation response from grazing systems would be accelerated, consequently habitat condition would also be accelerated. Increased carrying capacity (spin off from no spring use) enhances grazing systems.	Same as proposed action except there would be no spring forage competition in the use pasture thus reducing stress to animals in the spring.	Beneficial impacts same as proposed action. Adverse impacts of use pasture eliminated in spring. Increased quality of spring habitat.
Ecological Condition Change	Refer to Grazing Systems (above).	Spring rest would accelerate upward trend on those areas expected to increase in condition. This would provide better spring habitat and increase carrying capacities on spring range.	→
Social Interaction	Spring social stress reduced or eliminated, especially those stresses associated with reproductive activities.	Decreased social stress on spring range overlap areas.	Elk would seldom, if ever, have to interact with livestock.
Use of Riparian Zones by Livestock and Horses	Impacts same as proposed action.	Same as proposed action except spring habitat quality would be enhanced.	→
Reduction in Wild Horses	Same as proposed action.	→	No impact.
Water Developments	Same as proposed action.	→	→
Fences	Riparian zones that are fenced would provide significantly improved habitat increasing wildlife diversity through increased food and cover.	Riparian zones that are fenced would provide significantly improved resting and hiding cover and forage. Some fence related mortality would be expected.	Same as proposed action.
Brush Beating	Same as proposed action.	→	→
Burning	Same as proposed action.	→	→
Plow and Seed	Same as proposed action.	No impact.	No impact.
Land Development	Same as proposed action.	→	No impact.

TABLE 8-34

IMPACTS TO TERRESTRIAL WILDLIFE
MINIMUM CONSTRAINTS ON WILDLIFE
ALTERNATIVE 4

	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Allocation of Forage	Same as proposed action.	No grazing by livestock on any winter ranges would eliminate all forage competition. Carrying capacities increased. Potential population increases viable.	Same as proposed action.
Turnout Dates	Eliminate current livestock/antelope competition for early spring forage. Reduced stress to fawning and lactating does. Reduce stress to newborn. Spring habitat quality enhanced.	Elimination of livestock from sheep ranges eliminates any adverse impacts due to livestock.	Very significant beneficial impacts would occur. Stress eliminated or reduced during reproduction and birth.
Grazing Systems	Same as proposed action, except adverse impacts from early spring grazing would be eliminated.	No impact.	Same as proposed action except spring livestock use would be eliminated.
Ecological Condition Change	Spring rest would accelerate upward trend on those areas expected to increase in condition. This would provide better spring habitat and increase carrying capacities on spring range.	Habitat quality and quantity increased on areas previously utilized by livestock. Increased carrying capacity on bighorn range.	Spring rest would accelerate upward condition trends and increase habitat quality.
Social Interaction	Same as proposed action except impacts eliminated in the spring and also with livestock in Corral Basin and Horse Basin.	No impact.	Same as proposed action but absence of livestock/game bird interaction in spring significantly reduces adverse impacts.
Use of Riparian Zones by Livestock and Horses	Same as proposed action except reduced somewhat in spring.	No impact.	Same as proposed action except adverse impacts eliminated from livestock use during spring.
Reduction in Wild Horses	Same as proposed action. Increased distribution of antelope and increased habitat quality and quantity in Horse Basin and Corral Basio.	No impact.	Same as proposed action.
Water Developments	Same as proposed action.	No impact.	Same as proposed action.
Fences	Same as proposed action.	No impact.	⟶
Brush Beating	Same as proposed action.	No impact.	Same as proposed action.
Burning	No impact.	Same as proposed action.	⟶
Plow and Seed	No impact.	⟶	⟶
Land Development	Same as proposed action.	⟶	No impact.

In the Herd Creek watershed, significant improvements in fish habitat would result from fencing 4.0 miles of Lake Creek and 3.8 miles of Herd Creek on public land. Riparian vegetation recovery would increase total stream shading to about 80 percent in fenced areas. Stream siltation due to bank trampling and bank instability would decrease substantially. These changes would improve fish spawning habitat and increase the carrying capacities of Herd and Lake Creeks for resident and anadromous fish.

Excellent habitat conditions would not result along all fenced stream sections on Herd Creek because stream siltation from private ranchers and upstream Forest Service lands would continue. Fish spawning and rearing habitat in Herd Creek would also be adversely impacted where livestock use of the streambanks would be concentrated at water gaps and cattle crossings. Habitat conditions on these short stream sections would deteriorate due to loss of streambank vegetation and localized increases in stream siltation. Overall, fish production would increase in Herd Creek despite off-site sources of silt and localized grazing impacts at stream access points.

Since Herd Lake acts as a sediment trap immediately above the proposed fencing project on Lake Creek, stream siltation would decrease dramatically in 4.0 miles of Lake Creek after livestock were excluded from the riparian area. Riparian vegetation and streambank stability would improve in the fenced area. Anadromous fish spawning and rearing habitat in the lower half-mile of Lake Creek would improve from good to excellent condition. 3.5 miles of resident trout habitat above this lower section would improve from "fair" to "good".

Fencing the Corral Basin and Horse Basin watersheds would reduce erosion in the Road Creek drainage (see soils section of this alternative). Downstream salmon and steelhead habitat in the East Fork River would improve as stream siltation decreased. Fourteen miles of resident trout habitat now in poor condition would improve to "fair" condition as streamside vegetation and stream stability increased following fencing. About 0.8 miles of trout habitat in "fair" condition would improve to good condition within 15 years.

Wild Horses

A change in numbers of wild horses from approximately 586 animals to 141 animals would result in the same kinds of impacts as discussed in the proposed action. There would be 37.8 miles more fencing in this alternative which would increase the potential of wild horses injured or killed from entanglement with barbed wire.

The later turnout date for livestock, June 16 instead of May 1, would probably result in somewhat less utilization of forage by cattle on the wild horse winter range.

Livestock Grazing

Implementation of Alternative 4 would significantly effect livestock operations in the Challis Unit. Impacts to the livestock operators concerning adjustment in AUMs of use are displayed and discussed in the Socio-Economic section.

Establishment of Alternative 4 season of use (Table 8-35) would cause 36 livestock operators to loose 45 days spring grazing and one operator to loose 30 days spring grazing.

To compensate reduction in AUMs of spring grazing on public lands during May and early June, livestock operators would have to buy hay, lease pasture or reduce herd numbers.

TABLE 8-35

CHANGE IN TOTAL AUMs AND CATTLE NUMBERS
RESULTING FROM ALTERNATIVE 4, CHALLIS UNIT

Present Use		Alternative 4 Level of Use		Change Resulting From Alternative 4	
AUMs	Cattle Numbers	AUMs	Cattle Numbers	AUMs	Cattle Numbers
17,444	7,700	9,202	3,361	8,242	4,339

If the forage (8,242 AUMs) identified in Table 8-35 were replaced by hay, it would require 3,681 tons annually.

There is very little irrigated or dry pasture available to lease in the Challis area. The only alternative for many of the range users may be to reduce herd size. It is impossible to predict the change in number of cattle raised in Custer County as a result of Alternative 4 because of the difference in capability of each operator to adjust his livestock operation. The change would probably be something less than the 4,339 cattle number in Table 8- 35.

After 15 years under this alternative there would be increased production of forage as a result of better management of the range. This would amount to 11,167 AUMs that could be allocated to livestock at the time additional forage is determined available for grazing animals through the BLM planning system. For purposes of analysis, these 11,167 AUMs are considered for livestock use in the future.

Initial Stocking Rate	9,202 AUMs
Increased Production in 15 Years	11,167 AUMs
	20,369 AUMs

This would be 2,925 AUMs above the current eight-year average use.

Economics

Under the livestock stocking level for Alternative 4, the average rancher would experience a 195-AUM decrease. (For purposes of these calculations, the largest operator was excluded so the distribution would not be skewed). The following tables show the economic impacts of buying hay, grazing on private land, and changing herd size.

The average rancher would have to spend $3,900 for buying hay to supplement the AUM loss, $1,164 to graze on private land to supplement the AUM loss, or lose approximately $8,752 from reducing herd size.

Annual income loss for all 38 livestock operators could total $333,000. Potential secondary reduction to Custer County income would approximate $111,000.

After 15 years under this alternative, net annual income to the average rancher could amount to $3,591. This would total $136,458 for its 38 ranchers annually.

Public Values and Attitudes

The social impacts resulting from this alternative are the same in kind as the proposed action. Variation is in intensity and this cannot be quantified.

Water

Water Use. Water consumption by livestock, wild horses, and wildlife under this alternative would be 4,330,860 gallons per year. This would be a decrease of 6,160,152 gallons per year below existing water consumption. The decrease is the result of reducing the numbers of grazing animals.

Streamflow. Alternative 4 would have an unmeasurable effect on streamflow. Impacts related to streamflows are the same as the proposed action.

Water Quality. Water quality impacts are the same as the proposed action.

TABLE 8- 36

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ALTERNATIVE 4
GRAZING ON PRIVATE LAND

	Average per Ranch 1975
Returns	
Sale of Calves	$18,509
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	27,073
Expenses	
Land Rent	400
Feed	7,024
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	31,114
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-4,041
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-2,108

TABLE 8-37

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ALTERNATIVE 4
BUYING OF HAY

	Average per Ranch 1975
Returns	
Sale of Calves	$18,509
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	27,073
Expenses	
Land Rent	400
Feed	9,760
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	33,850
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-6,777
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-4,844

TABLE 8-38

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ALTERNATIVE 4
HERD REDUCTION

	Average per Ranch 1975
Returns	
Sale of Calves	$18,757
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	18,321
Expenses	
Land Rent	400
Feed	5,860
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	29,950
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-11,629
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-9,696

TABLE 8-39

ECONOMIC IMPACTS OF ALTERNATIVE 4 ON RANCHERS IN THE CHALLIS ES AREA

OPERATOR	ACTIVE AUMs	AVERAGE AUMs	PROPOSED AUMs	LOSS FROM ACTIVE	PERCENTAGE LOSS	LOSS FROM AVERAGE	PERCENTAGE LOSS	DEPENDENCY ON BLM AUMs
Baker, Eddie	290	283	1	289	-99.66	282	-99.65	8.05
Baker, Richard	213	209	1	212	-99.53	208	-99.52	7.24
Bennetts, Jim	135	135	135	0	0.00	0	0.00	11.23
Bishop, Laura	358	346	167	191	-53.35	179	-51.73	27.07
Bradshaw, Eugene	57	56	45	12	-21.05	11	-19.64	15.73
Bradshaw, Kenneth	172	119	94	78	-45.35	25	-21.01	25.50
Carlisle, Lewis	539	228	163	376	-69.76	65	-28.51	35.83
Chivers, Garth	278	16	135	143	-51,44	-119	743.75	15.42
Cominotti, Fabio	264	246	67	197	-74.62	179	-72.76	11.45
Corrigan, Dick	88	78	32	56	-63.64	46	-58.97	14.97
Cutler, Howard	180	148	66	114	-63.33	82	-55.41	11.52
Ennis, Mrs. James L	134	127	85	49	-36.57	42	-33.07	31.72
Hammond, John	183	147	66	117	-63.93	81	-55.10	12.69
Hammond, Robert	38	17	24	14	-36.84	-7	41.18	12.57
Hanson, Margaret	465	383	159	306	-65.81	224	-58.49	15.99
Helm, Calvin	104	39	38	66	-63.46	1	-2.56	7.86
Horning, Tim	24	9	9	15	-62.50	0	0.00	24.39
Ingram, Will	5,542	4,521	3,020	2,522	-45.51	1,501	-33.20	24.83
Jan Mar Corp.	904	385	297	607	-67.15	88	-22.86	30.11
Keppner, Ray	230	199	82	148	-64.35	117	-58.79	7.66
Laverty, Ray	141	1	52	89	-63.12	-51	100.00	12.47
Leuzinger, George	65	41	36	29	-44.62	5	-12.20	7.72
Leuzinger, Jake & Son	186	145	56	130	-69.89	89	-61.38	20.61
Maraffio, Frank	300	226	117	183	-61.00	109	-48.23	14.27
Peck, Joseph	262	72	94	168	-64.12	-22	30.56	39.55
Pedrini Brothers	181	181	181	0	0.00	0	0.00	11.58
Philps, Ethel	155	136	56	99	-63.87	80	-58.82	3.78
Piva Brothers	413	337	152	261	-63.20	185	-54.90	4.92
Pleus, Herman	50	25	44	6	12.00	-19	76.00	13.80
San Felipe Ranch	8,375	7,396	2,868	5,507	-65.76	4,528	-61.22	23.26
Sherwood, Archie	55	45	37	18	-32.73	8	-17.78	11.34
Smith, Kenneth	55	36	20	35	-63.64	16	-44.44	14.63
Stark, Kenneth	15	9	5	10	-66.67	4	-44.44	4.14
Stevens, Robert	29	7	10	19	-65.52	-3	42.86	4.01
Westgard, Gean	240	48	150	90	-37.50	-102	212.50	7.99
Westgard, Golden	155	155	97	58	-37.42	58	-37.42	3.23
Wooley, Dan	552	429	241	311	-56.34	188	-43.82	25.27
Yates, Ralph	473	467	295	178	-37.63	172	-36.83	15.33
Totals	21,900	17,447	9,197	12,703		8,250		

TABLE 8-40

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK, WILD HORSES AND WILDLIFE UNDER ALTERNATIVE 4

Animal	Animal Months/Year	Gallons per Animal/Month	Total Gallons per Year
Livestock	9,202	300	2,760,600
Wild Horses	1,692	375	634,500
Deer	38,846	15	582,690
Antelope	3,926	30	117,780
Elk	951	150	142,650
Bighorn Sheep	1,544	60	92,640
			4,330,860 Gallons/Year

Recreation

There will be no significant impact to the recreation resource as a result of the proposal in Alternative 4.

Cultural Resources

Damage and destruction would continue to occur at known cultural resource sites (268 sites) for three years. This would continue until the proposed cultural resource management activity plan could be initiated. These sites are unique and vulnerable to all levels of ground-disturbing activities, including trampling by livestock and streambank and gully erosion.

Damage to unknown sites and subsurface sites not discovered during project surveillance would be almost certain to occur. In cases where salvage mitigation is required, the impact would not be fully mitigated. Salvage of cultural resources is an unavoidable adverse impact. Once excavated, a site is effectively destroyed and removed from future research considerations which may utilize new techniques. Salvage is rarely as effective as non-salvage research programs, partially because of time limitations, funding, and personnel competence. Emergency salvage, required by unexpected discoveries during project initiations, would be even less effective.

Reduction in the rate of soil erosion resulting from Alternative 4 would cause a slower rate of damage to most of the cultural resources. The level of stocking of livestock and wild horses would result in less trampling damage to the resource than is occurring under present conditions.

MINIMUM CONSTRAINTS ON WILD HORSES
(ALTERNATIVE 5)

This alternative maximizes the wild horse resource within resource capability and policy constraints as developed in Step 1 of the MFP. The use levels for this alternative are shown in Table 8-41. Range improvements and vegetative manipulation required to implement this alternative are shown in Table 8-42.

Appendix 1 contains a brief explanation of the process and rationale used in developing this alternative through the MFP planning process.

Wild horse numbers would be controlled at an average level of 340 head. They would fluctuate between 200 and 425. A gathering program would be required every four years in order to maintain the herd at the average level.

ANALYSIS OF IMPACTS

Vegetation

Implementation of this alternative would result in maintaining the horse numbers within the ES area at about 340 head. An average of 4,890 AUMs would be allocated each year to wild horses. This is about 246 less horses than presently occupy the area. The present number of horses require about 8,790 AUMs of forage annually. Tables 8-44, 45 and 46 illustrate projected data for vegetative condition, trend, and availability of AUMs after 15 years under Alternative 5.

A summary of the condition, trend, and available AUMs for this alternative is as follows:

Vegetation Condition	Present Acres	Future Acres	Percent Change
Good	33,815	78,316	+132
Fair	145,440	122,741	- 16
Poor	103,567	81,765	- 21
Rock, Douglas-Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

TABLE 8-41

ALLOCATION OF FORAGE TO GRAZING UNGULATES AND PROPOSED GRAZING TREATMENTS

	Domestic Livestock (Cattle)					Wild Horses		
Allotment	Class	Numbers	Season of Use	AUMs	Specific Grazing System	Numbers	Season of Use	AUMs
Red Lake	Cattle	307	5/1 to 6/30	613	Seasonal	42	Season Long	630
Herd Creek	Cattle	666	6/16 to 10/10	1,411	Rest-Rotation 3 Pasture			
Road Creek	Cattle	160	5/1 to 6/30	320	Seasonal	34	Season Long	510
Bruno Creek	Cattle	19	5/16 to 9/30	85	Seasonal			
Round Valley	Cattle	219	5/1 to 6/30	438	Seasonal			
San Felipe/ Peck Canyon	Cattle	611	5/1 to 9/29	3,381	Rest-Rotation 3 Pasture	82	Season Long	1,230
Warm Springs	Cattle	684	5/1 to 12/15	1,994	Rest-Rotation 6 Pasture	152	Season Long	2,280
Garden Creek	Cattle	300	5/1 to 6/30	600	Rest-Rotation 4 Pasture			
Bald Mountain	Cattle	148	5/1 to 6/30	296	Rest-Rotation 3 Pasture			
Thompson Creek	Cattle	10	5/16 to 10/15	51	Deferred Rotation 3 Pasture*			
Split Hoof	Cattle	59	5/1 to 6/30	118	Seasonal	16	Season Long	240
Squaw Creek	Cattle	67	5/1 to 6/30	133	Deferred Rotation 2 Pasture			
Spud Creek	Cattle	101	5/1 to 6/30	202	Deferred Rotation 2 Pasture			
Pine Creek	Cattle	129	5/16 to 6/10 10/1 to 10/16	181	Seasonal			
East Fork	Cattle	96	5/1 to 6/30	192	Rest-Rotation 3 Pasture			
Sullivan Creek	Cattle	43	5/1 to 6/30	85	Seasonal			
Malm Gulch		0	None	0	No Grazing	14	Season Long	210
Total		3,619		10,100		340		5,100

*One of the lower two pastures is rested each year.
The upper pasture will be grazed after seed ripe each year.

TABLE 8- 41

Wildlife

		Elk			Deer			Antelope			Bighorn Sheep	
Allotment	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs	Numbers	Season of Use	AUMs
Red Lake				450	Winter/Spring	496	70	Winter	38			
							30	Spr/Summer/Fall				
Herd Creek	20	Winter/Spring	38	500	Winter/Spring	552						
Road Creek	2	Winter/Spring	4	425	Winter/Spring	469	65	Spr/Summer/Fall	31	30	Winter/Spring.	31
Bruno Creek	16	Winter/Spring	31	125	Winter/Spring	54						
Round Valley				50	Winter/Spring	55	150	Winter	78			
							58	Spr/Summer/Fall				
San Felipe/	140	Winter/Spring	271	175	Winter/Spring	239	570	Winter	349			
Peck Canyon				(39)	Summer/Fall		333	Spr/Summer/Fall				
Warm Springs				200	Winter/Spring	221	210	Winter	219			
							315	Spr/Summer/Fall				
Garden Creek	40	Winter/Spring	25	1,025	Winter/Spring	1,130	40	Yearlong	33	80	Winter/Spring	83
Bald Mountain	10	Winter/Spring	19	1,000	Winter/Spring	1,102						
Thompson Creek	38	Winter/Spring	73	250	Winter/Spring	276						
Split Hoof				200	Winter/Spring	221	30	Spr/Summer/Fall	14			
Squaw Creek	36	Winter/Spring	70	284	Winter/Spring	316						
Spud Creek	5	Winter/Spring	10	290	Winter/Spring	319	120	Winter	47	25	Winter/Spring	25
							15	Spr/Summer/Fall				
Pine Creek				200	Winter/Spring	221						
East Fork	5	Winter/Spring	10	300	Winter/Spring	330				85	Winter/Spring	88
Sullivan Creek	5	Winter/Spring	10	150	Winter/Spring	165	20	Spr/Summer/Fall	9			
Malm Gulch	0		0	0								
Total	317		561	5,624		6,166	1,160	Winter	818	220		227
							906	Spr/Summer/Fall				

Trend in Condition	Present Acres	Future Acres	Percent Change
Up	12,790	79,145	+519
Down	72,977	570	- 99
Static	197,055	203,107	+ 3
Rock, Douglas-Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Range Improvements

Construction of range improvements would temporarily remove about 53 acres from production and permanently remove approximately eight acres. Average recovery time would be approximately five years.

In addition to range improvement construction, there would be 23,385 acres initially disturbed by vegetation manipulations (see Table 8-43).

The overall impact of brush beating 21,075 acres would be a change in species composition toward more grass and forbs for livestock, wild horses and wildlife. The long-term impact would be an increase in forage production from about 90 pounds per acre to 120 pounds per acre Range condition of these acres would be expected to improve one condition class.

Plowing and seeding of desirable grass, forbs and browse species on 1,310 acres would have a short term impact from production for not more than eight years. The long-term impact is expected to increase production from approximately 60 pounds per acre to 250 pounds per acre, with vegetative density increasing 100 percent. Range condition would be expected to change to "good" condition. Increases would be primarily livestock and wild horse forage.

Burning would have a short-term impact of removing vegetative cover the first spring season of the burning (1,000 acres). Long-term impact would be to change species composition toward more grass and forbs and an expected increase in forage production from approximately 120 pounds per acre to 140 pounds per acre. Range condition should change one class on the acreage receiving treatment.

Sediment Yield

With this alternative, as a result of increased plant and litter cover, sediment yield at the end of 15 years would change from about 1.32 tons/acre (presently occurring) to an average of .95 tons/acre or approximately 28 percent less per year. This would total approximately 315,000 tons of sediment yield annually for the Challis Unit under this alternative.

TABLE 8-42

PROPOSED RANGE IMPROVEMENTS AND VEGETATION MANIPULATIONS

ALTERNATIVE 5

					VEGETATION MANIPULATION		
ALLOTMENT (ACRES)	FENCING (MILES)	SPRING DEVELOPMENTS	WATER PIPELINES (MILES)	WATER TROUGHS	BRUSH BEAT (ACRES)	PLOW & SEED (ACRES)	BURN (ACRES)
Red Lake		5	2.5	4	1200		
Herd Creek	None	None	None	None	None	None	None
Road Creek	None	5	8	2	None	None	None
Bruno Creek	None	None	None	None	None	None	None
Round Valley	None	3	5	1	None	None	None
SanFelipe/Peck Canyon	24	7	11.5	10	8600	None	None
Warm Springs	0	5	5.0	5	7500	None	None
Garden Creek	4	None	7	5	1295	1310	None
Bald Mountain	4.75	None	3.7	3	1500	None	None
Thompson Creek	None	None	None	None	None	None	None
Split Hoof	0	5	None	None	330	None	None
Squaw Creek	1.5	1	None	None	650	None	None
Spud Creek	1.8	4	.3	None	None	None	None
Pine Creek	None	5	None	None	None	None	None
East Fork	1	5	1	1	None	None	1000
Sullivan Creek	None	None	None	None	None	None	None
Malm Gulch	----	----	----	----	----	----	----
Total	33.05	40	44.0	31	21,075	1,310	1,000

Note: All projects would be implemented the first 5 years except for two brush-beating projects; 1,000 acres in the Warm Springs Allotment and 1,500 acres in the Bald Mountain Allotment, which would be accomplished in four treatments of one-fourth of the area at 3-year intervals; the entire project completed in 12 years.

TABLE 8- 43

EXPECTED ACREAGE DISTURBED BY PROPOSED IMPROVEMENTS
ALTERNATIVE 5

Range Improvements	Unit	Total	Acres Disturbed per Unit		Total Acres Disturbed	
			Short-term a/	Long-term b/	Short-term a/	Long-term b/
Fencing	Miles	33.1	1	.002	33.1	.7
Water Developments						
Spring Developments	No.	40	.2	.2	8	8
Water Pipelines	Miles	44	.2	–	8.8	–
Water Troughs	No.	31	.1	–	3.1	–
Brush Beat	Acres	21,075	1	–	21,075	–
Plow and Seed	Acres	1,310	1	–	1,310	–
Burn	Acres	1,000	1	–	1,000	–
Total					23,438	8.7

a/ Short-term means 5 years from start of project.

b/ Long-term means at least 15 years or the term of the proposed action.

TABLE 8-44

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE MINIMUM CONSTRAINTS TO WILD HORSE ALTERNATIVE

Allotment	Current AUMs Available For Livestock	Future AUMs Available For Livestock
Red Lake	613	937
Herd Creek	1,411	1,411
Road Creek	346	564
Bruno Creek	85	148
Round Valley	438	549
San Felipe	3,484	5,120
Warm Springs	2,201	3,906
Garden Creek	600	996
Bald Mountain	296	403
Thompson Creek	51	54
Split Hoof	118	190
Squaw Creek	133	287
Spud Creek	202	304
Pine Creek	181	317
East Fork	192	331
Sullivan Creek	85	232
Malm Gulch	0	0
Total	10,436	15,273

TABLE 8- 45

PRESENT VEGETATION CONDITION COMPARED TO FUTURE CONDITION AFTER FIFTEEN YEARS IF ALTERNATIVE 5 IS ADOPTED (ACRES)

	Present				Minimum Constraints on Wild Horses			
Allotment	Good	Fair	Poor	Rock Douglas-Fir Burn	Good	Fair	Poor	Rock Douglas-Fir Burn
Red Lake	2,186	9,217	8,251	3,541	5,925	6,899	6,830	*
Herd Creek	8,292	6,637	2,138	4,983	*	*	*	*
Road Creek	1,800	9,430	2,250	2,085	3,336	7,946	2,198	*
Bruno Creek	494	537	76	1,271	*	*	*	*
Round Valley	6,010	3,978	2,596	919	*	*	*	*
San Felipe	3,370	32,272	39,267	6,407	14,631	29,355	30,923	*
Warm Springs	5,063	36,513	15,839	2,288	19,759	28,965	8,691	*
Garden Creek	699	16,726	8,988	4,045	*	*	*	*
Bald Mountain	327	5,977	7,507	8,726	*	*	*	*
Thompson Creek	276	2,119	785	2,415	*	*	*	*
Split Hoof	--	5,153	2,759	503	994	4,229	2,689	*
Squaw Creek	760	1,036	2,651	2,597	*	*	*	*
Spud Creek	307	3,568	2,797	2,184	*	*	*	*
Pine Creek	--	3,903	559	564	*	*	*	*
East Fork	61	4,861	4,384	2,412	*	*	*	*
Sullivan Creek	4	1,383	512	1,671	*	*	*	*
Malm Gulch	4,166	2,130	2,208	692	*	*	*	*
Totals	33,815	145,440	103,567	47,300	78,316	122,741	81,765	47,300

* Indicates no change from the proposed action.

TABLE 8-46

PRESENT TREND IN VEGETATION CONDITION COMPARED TO FUTURE TREND AFTER FIFTEEN YEARS IF ALTERNATIVE FIVE IS ADOPTED (ACRES)

ALLOTMENT	PRESENT				MINIMUM CONSTRAINTS ON WILD HORSES			
	UP	DOWN	STATIC	ROCK/DOUG FIR/BURN	UP	DOWN	STATIC	DOUGLAS FIR, ROCK AND BURN AREAS
Red lake	-0-	3,630	16,024	3,541	5,160	-0-	14,494	*
Herd Creek	-0-	570	16,497	4,983	*	570	*	*
Road Creek	-0-	4,789	8,691	2,085	1,588	-0-	11,892	*
Bruno Creek	-0-	-0-	1,107	1,271	*	*	*	*
Round Valley	-0-	-0-	12,585	919	*	*	*	*
SanFelipe	3,960	24,500	46,448	6,407	23,564	-0-	51,344	*
Warm Springs	-0-	23,450	33,965	2,288	21,844	-0-	35,571	*
Garden Creek	-0-	6,970	19,443	4,045	*	*	*	*
Bald Mountain	3,670	2,630	7,511	8,726	*	*	*	*
Thompson Creek	2,020	520	640	2,415	*	*	*	*
Split Hoof	-0-	2,600	5,312	503	1,064	-0-	6,848	*
Squaw Creek	-0-	650	3,797	2,597	*	*	*	*
Spud Creek	620	-0-	6,052	2,184	*	*	*	*
Pine Creek	-0-	-0-	4,462	564	*	*	*	*
East Fork	2,520	-0-	6,786	2,404	*	*	*	*
Sullivan Creek	-0-	1,648	250	1,672	*	*	*	*
Malm Gulch	-0-	1,020	7,425	691	*	*	*	*
Totals	12,790	72,977	197,055	47,300	79,145	570	203,107	47,300

* Indicates no change from the proposed action.

Wildlife-Terrestrial

Beneficial and adverse impacts are discussed in Table 8-47. Predictions of wildlife replacement, losses and displacement, as a result of this alternative, can be determined using Appendix 3A, 3B and 3C.

Wildlife-Aquatic

The impacts of minimum constraints on wild horses on aquatic habitat would be the same as in the proposed action.

Wild Horses

A change in numbers of wild horses from approximately 586 animals to 340 animals would stock the wild horse range at the maximum level of the winter range within the area. It is expected the wild horses would stay dispersed approximately as they presently are, the only change would be fewer bands of horses.

Protecting Malm Gulch Allotment and Sand Hollow watershed from wild horses would reduce the total area available to them. This would probably be significant at the 340-head level of wild horses because it creates a situation where wild horses would increase the area in which they are in competition for forage with cattle.

Both cattle and horses primarily subsist on grasses. A study on diet similarities between wild horses and cattle was made by Dr. Richard Hansen of Colorado State University in the Challis wild horse area and the findings were as follows:

Cattle (grazing season long) Horse Spring	68.0%
Cattle (grazing season long) Horse Summer	65.3%
Cattle (grazing season long) Horse Fall	61.4%

Habitat overlap between wild horses, wildlife and cattle is keenest around water, in wet meadow areas and other overlap areas where animals tend to concentrate.

Implementation of rest-rotation systems for livestock grazing management, installation of range improvement projects and vegetation manipulation projects would cause the same kinds of impacts as the proposed action. It is impossible to quantify the difference in intensity of impact but the lesser numbers of cattle grazing the wild horse area would somewhat reduce competition for forage.

TABLE 8-47

IMPACTS TO TERRESTRIAL WILDLIFE
MAXIMUM HORSE USE
ALTERNATIVE 5

	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Allocation of Forage	Reduction of cows and horses from antelope use areas would increase forage, enhance habitat quantity and carrying capacity.	Same as proposed action.	→
Turnout Dates	Same as proposed action except no livestock use in wild horse winter range would improve carrying capacity for antelope.	Same as proposed action.	Same as proposed action except habitat would improve where cows are removed and horses reduced. Decreased stress and improved habitat quality.
Grazing Systems	Same as above.	Same as proposed action.	Same as above.
Ecological Change	Ecological condition changes would be accelerated due to decreased horse use and elimination or reduction of livestock. Increased carrying capacity for antelope.	Same as proposed action.	Ecological condition changes would be accelerated in areas where livestock are eliminated or decreased as well as reduction of horses. Habitat quality improved in the areas. Otherwise, same as proposed action.
Social Interaction	Decreased adverse impact due to lesser numbers of cows and horses. Habitat quality increased.	Same as proposed action.	Same as proposed action except reduced where livestock are removed and horses reduced.
Use of Riparian Zones by Livestock and Horses	Same as proposed action except reduced adverse impacts in areas where livestock are removed and horses reduced.	Same as proposed action.	Same as above.
Water Developments	Same as proposed action.	→	→
Fences	Same as proposed action.	→	→
Brush Beating	Same as proposed action except increased beneficial impacts where cows are reduced or eliminated. Antelope would receive more forage from project.	No impact.	Same as proposed action except increased beneficial impacts where livestock grazing eliminated and horse use reduced.
Burning	Same as proposed action.	→	→
Plow and Seed	No impact.	→	Same as proposed action.
Land Development	Same as proposed action.	→	No impact.

TABLE 8-47

IMPACTS TO TERRESTRIAL WILDLIFE
MAXIMUM HORSE USE
ALTERNATIVE 5

	NON-GAME WILDLIFE	DEER	ELK
Allocation of Forage	Same as proposed action.	→	→
Turnout Dates	Same as proposed action.	→	→
Grazing Systems	Same as proposed action.	→	→
Ecological Change	Reduction in horse numbers could enhance habitat condition changes. Quality and quantity of habitat improved.	→	Same as proposed action.
Social Interaction	Same adverse impacts as the proposed action except wildlife/horse adverse impacts increased and livestock conflicts reduced.	—	Would eliminate present conflicts where horses and elk presently interact.
Use of Riparian Zones by Livestock and Horses.	Same as proposed action.	→	→
Reduction in Horse Numbers	Reduces stress, mortality, displacement, increased habitat condition, carrying capacity, diversity.	→	Same as social interaction and would enhance habitat quality and quantity. Increase carrying capacity.
Water Developments	Same as proposed action.	→	→
Fences	Same as proposed action.	→	→
Brush Beating	Same as proposed action.	→	No impact.
Burning	Same as proposed action.	→	→
Plow and Seed	Same as proposed action.	→	No impact.
Land Development	No impact.	→	→

Livestock Grazing

Implementation of Alternative 5 would significantly effect livestock operations in the Challis Unit. Impacts to the livestock operators concerning adjustment in AUMs of use are displayed and discussed in the Socio-Economic section.

Establishment of Alternative 5 season of use (Table 8-48) would cause six of the total 38 operators to be restricted from both summer and fall grazing currently allowed. Six would no longer be allowed summer grazing, three would no longer be allowed fall grazing, and one would have the winter season shortened one month.

The seasonal restriction from current use of the public lands would require these 16 livestock operators to adjust their total operation.

To compensate reductions of AUMs and loss of grazing on public lands primarily in spring, summer, and fall, livestock operators would either have to buy hay, lease pasture, or reduce numbers.

TABLE 8-48

CHANGE IN TOTAL AUMs AND CATTLE NUMBERS
RESULTING FROM ALTERNATIVE 5, CHALLIS UNIT

Present Use		Alternative 5 Level of Use		Change Resulting From Alternative 5	
AUMs	Cattle Numbers	AUMs	Cattle Numbers	AUMs	Cattle Numbers
17,444	7,700	10,100	3,619	7,344	4,081

If the forage (7,344 AUMs) identified in Table 8-48 were replaced by hay, it would require 2,938 tons annually.

There is very little irrigated or dry pasture available to lease in the Challis area. The only alternative for many of the range users may be to reduce their herds. It is impossible to predict the change in number of cattle raised in Custer County as a result of Alternative 5 because of the difference in capability of each operator to adjust their livestock operation. The change would probably be something less than the 4,081 cattle number in Table 8-48.

After 15 years under this alternative there would be increased production of forage as a result of better management of the range. This would amount to 5,623 AUMs that could be allocated to livestock. At the time additional forage is determined available for grazing use an allocation would be made to grazing animals through the BLM planning system. For purposes of analysis, these 5,623 AUMs are considered for livestock use in the future.

Initial stocking rate	10,100 AUMs
Increased production after 15 years	5,623 AUMs
Total	15,723 AUMs

This would be 90 percent of the current eight-year average use.

Economics

Under the livestock stocking level for Alternative 5, the average rancher would experience a 184-AUM decrease (for purposes of these calculations, the largest operator was excluded so the distribution would not be skewed). The following tables show the economic impacts of buying hay, grazing on private land, and changing herd size.

The avarage rancher would have to spend $3,700 for buying hay to supplement the AUM loss, $1,100 to graze on private land to supplement the AUM loss, or lose approximately $7,800 from reducing herd size.

Annual income loss for all 38 livestock operators could amount to $296,000. Potential secondary reduction to Custer County income would approximate to $98,800 annually.

At the end of 15 years under this alternative, net annual income to the average rancher could amount to -$3,619. This would total -$137,522 for the total 38 operators annually.

Public Values and Attitudes

The social impacts resulting from this alternative are the same in kind as the proposed action. Variation is in intensity and this cannot be quantified.

Water

Water Use. Water consumption by grazing animals is estimated to be 5,605,560 gallons per year under this alternative. A decrease in use by 4,885,452 gallons per year is expected from the present level of water consumption described in Chapter II. A reduction in grazing animals is responsible for the decrease in water consumption.

Streamflow. This alternative would have an unmeasurable effect on stream flow, see the proposed action for the impacts related to streamflow.

TABLE 8-49

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ALTERNATIVE 5
BUYING OF HAY

	Average per Ranch 1975
Returns	
Sale of Calves	$18,509
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	27,073
Expenses	
Land Rent	400
Feed	
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	31,050
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-3,977
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-2,044

TABLE 8-50

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ALTERNATIVE 5
GRAZING ON PRIVATE LAND

	Average per Ranch 1975
Returns	
Sale of Calves	$18,509
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	27,073
Expenses	
Land Rent	400
Feed	9,560
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	33,650
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-6,577
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-4,644

TABLE 8-51

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ALTERNATIVE 5
HERD REDUCTION

	Average per Ranch 1975
Returns	
Sale of Calves	$10,709
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	19,273
Expenses	
Land Rent	400
Feed	5,860
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	29,950
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-10,667
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-8,744

TABLE 8-52

ECONOMIC IMPACTS OF ALTERNATIVE 5
ON RANCHERS IN THE CHALLIS ES AREA

OPERATOR	ACTIVE AUMs	AVERAGE AUMs	PROPOSED AUMs	LOSS FROM ACTIVE	PERCENTAGE LOSS	LOSS FROM AVERAGE	PERCENTAGE LOSS	DEPENDENCY ON BLM AUMs
Baker, Eddie	290	283	111	179	-61.72	172	-60.78	8.05
Baker, Richard	213	209	81	132	-61.97	128	-61.24	7.24
Bennetts, Jim	135	135	135	0	0.00	0	0.00	11.23
Bishop, Laura	358	346	167	191	-53.35	179	-51.73	27.07
Bradshaw, Eugene	57	56	45	12	-21.05	11	-19.64	15.73
Bradshaw, Kenneth	172	119	87	85	-49.42	32	-26.89	25.50
Carlisle, Lewis	539	228	163	376	-69.76	65	-28.51	35.88
Chivers, Garth	278	16	135	143	-51.44	-119	743.75	15.42
Cominotti, Fabio	264	246	67	197	-74.62	179	-72.76	11.45
Corrigan, Dick	88	78	32	56	-63.64	46	-58.97	14.97
Cutler, Howard	180	148	66	114	-63.33	82	-55.41	11.52
Ennis, Mrs. James L	134	127	85	49	-36.57	42	-33.07	31.72
Hammond, John	183	147	66	117	-63.93	81	-55.10	12.69
Hammond, Robert	38	17	24	14	-36.84	-7	41.18	12.57
Hanson, Margaret	465	383	159	306	-65.81	224	-58.49	15.99
Helm, Calvin	104	39	38	66	-63.46	1	-2.56	7.86
Horning, Tim	24	9	9	15	-62.50	0	0.00	24.39
Ingram, Will	5,542	4,521	3,229	2,313	-41.74	1,292	-28.58	24.83
Jan Mar Corp.	904	385	297	607	-67.15	88	-22.86	30.11
Keppner, Ray	230	199	82	148	-64.35	117	-58.79	7.66
Laverty, Ray	141	1	52	89	-63.12	-51	100.00	12.47
Leuzinger, George	65	41	33	32	-49.23	8	-19.51	7.72
Leuzinger, Jake & Son	186	145	56	130	-69.89	89	-61.38	20.61
Maraffio, Frank	300	226	117	183	-61.00	109	-48.23	14.27
Peck, Joseph	262	72	94	168	-64.12	-22	30.56	39.55
Pedrini Brothers	181	181	181	0	0.00	0	0.00	11.58
Philps, Ethel	155	136	56	99	-63.87	80	-58.82	3.78
Piva Brothers	413	337	152	261	-63.20	185	-54.90	4.92
Pleus, Herman	50	25	40	10	-20.00	-15	60.00	13.80
San Felipe Ranch	8,375	7,396	3,381	4,994	-59,63	4,015	-54.29	23.26
Sherwood, Archie	55	45	42	13	-23.64	3	-6.67	11.34
Smith, Kenneth	55	36	20	35	-63.64	16	-44.44	14.68
Stark, Kenneth	15	9	5	10	-66.67	4	-44.44	4.14
Stevens, Robert	29	7	10	19	-65.52	-3	42.86	4.01
Westgard, Gean	240	48	150	90	-37.50	-102	212.50	7.99
Westgard, Golden	155	155	97	58	-37.42	58	-37.42	3.23
Wooley, Dan	552	429	257	295	-53.44	172	-40.09	25.27
Yates, Ralph	473	467	279	194	-41.01	188	-40.26	15.33
Totals	21,900	17,447	10,100	11,800		7,347		

Water Quality. Water quality impacts are the same as the proposed action.

TABLE 8-53

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK,
WILD HORSES AND WILDLIFE UNDER ALTERNATIVE #5

Animal	Animal Months/Year	Gallons Animal/Month	Total Gallons per Year
Livestock	10,100	300	3,030,000
Wild Horses	4,080	375	1,530,000
Deer	38,846	15	582,690
Antelope	3,926	30	117,780
Elk	1,683	150	252,450
Bighorn Sheep	1,544	60	92,640
			5,605,560 Gallons/Year

Recreation

There would be no significant impact to the recreation resource as a result of the proposal in Alternative 5.

Cultural Resources

Damage and destruction would continue to occur at known cultural resource sites (268 sites) for three years. This would continue until the proposed cultural resource management activity plan could be initiated. These sites are unique and vulnerable to all levels of ground-disturbing activities, including trampling by livestock and streambank and gully erosion.

Damage to unknown sites and subsurface sites not discovered during project surveillance would be almost certain to occur. In cases where salvage mitigation is required, the impact would not be fully mitigated. Salvage of cultural resources is an unavoidable adverse impact. Once excavated, a site is effectively destroyed and removed from future research considerations which may utilize new techniques. Salvage is rarely as effective as non-salvage research programs, partially because of time limitations, funding, and personnel competence. Emergency salvage, required by unexpected discoveries during project initiations, would be even less effective.

Reduction in the rate of soil erosion resulting from Alternative 5 would cause a slower rate of damage to most of the cultural resources. The level of stocking of livestock and wild horses would result in less trampling damage to the resource than is occurring under present conditions.

REDUCED LEVEL OF GRAZING OF LIVESTOCK AND WILD HORSES (ALTERNATIVE 6)

This alternative represents a different possible multiple use mix option as developed in the Step 2 MFP process. The use levels for this alternative are shown in Table 8-55. Range improvements and manipulation required to implement this alternative are shown in Table 8-56.

Appendix 1 contains a brief explanation of the process and rationale used in developing this alternative through the MFP planning process.

The wild horse herd would be controlled at an average level of 80 head. They would fluctuate between 75 and 100. A gathering program would be required every year in order to maintain the herd at the average level.

A total of 24.9 miles of stream would be fenced to protect anadromous fish habitat. These are the same streams that would be fenced under the minimum constraint in the wildlife alternative. As under the wildlife alternative, livestock grazing would be eliminated from the crucial bighorn sheep winter ranges and from the elk crucial winter range in the San Felipe/Peck Canyon Allotment.

ANALYSIS OF IMPACTS

Vegetation

Implementation of this alternative would result in the allocation of 7,128 AUMs to livestock and 1,200 AUMs to wild horses. This represents a 59 percent reduction in livestock use and an 86 percent reduction in wild horse use when compared to the present situation. Wildlife use would remain at the same level as described in the proposed action. The reduced level of grazing in this alternative would have the following beneficial impacts to desirable vegetative species:

1. Increased vigor
2. Increased seed production
3. Increased seedling establishment
4. Increased litter accumulation

Those allotments with rest rotation or deferred grazing systems would respond with accelerated beneficial impacts. The reduced stocking rates coupled with a systematic spring rest or

TABLE 8-55

ALLOCATION OF FORAGE TO GRAZING UNGULATES AND PROPOSED GRAZING TREATMENTS

	Domestic Livestock (Cattle)					Wild Horses		
Allotment	Class	Numbers	Season of Use	AUMs	Specific Grazing System	Numbers	Seasoo of Use	AUMs
Red Lake	Cattle	256	5/1 to 6/30	511	Seasonal	11	Season Long	165
Herd Creek	Cattle	666	6/16 to 10/10	1,411	Rest-Rotation 3 Pasture			
Road Creek	Cattle	112	5/1 to 6/30	224	Seasonal	8	Season Long	120
Bruno Creek	Cattle	12	5/16 to 9/30	55	Seasonal			
Round Valley	Cattle	124	5/1 to 6/30	247	Seasonal			
San Felipe/ Peck Canyon	Cattle	350	5/1 to 9/29	1,938	Rest-Rotation 3 Pasture	12	Season Long	180
Warm Springs	Cattle	579	5/1 to 12/15	1,688	Rest-Rotation 5 Pasture	45	Season Long	675
Garden Creek.	Cattle	168	5/1 to 6/30	336	Rest-Rotation 4 Pasture			
Bald Mountain	Cattle	45	5/1 to 6/30	90	Rest-Rotation 3 Pasture			
Thompson Creek	Cattle	4	5/16 to 10/15	19	Deferred Rotation 3 Pasture			
Split Hoof	Cattle	44	5/1 to 6/30	88	Seasonal	4	Season Long	60
Squaw Creek	Cattle	55	5/1 to 6/30	110	Deferred Rotation 2 Pasture			
Spud Creek	Cattle	47	5/1 to 6/30	94	Deferred Rotation 2 Pasture			
Pine Creek	Cattle	83	5/11 to 6/10 10/1 to 10/16	116	Seasonal			
East Fork	Cattle	55	5/1 to 6/30	110	Rest-Rotation 3 Pasture			
Sullivan Creek	Cattle	45	5/1 to 6/30	91	Seasonal			
Malm Gulch		0		0	No Grazing			
Total		2,645		7,128		80		1,200

Wildlife

	Elk			Deer			Antelope			Bighorn Sheep		
Allotment	Numbera	Season of Use	AUMs	Numbera	Season of Use	AUMs	Numbera	Season of Use	AUMs	Numbers	Season of Use	AUMs
Red Lake				450	Winter/Spring	496	70 30	Winter Spr/Summer/Fall	38			
Herd Creek	10	Winter/Spring	38	500	Winter/Spring	552						
Road Creek	2	Winter/Spring	4	425	Winter/Spring	469	65	Spr/Summer/Fall	31	30	Winter/Spring	31
Bruno Creek	16	Winter/Spring	31	125	Winter/Spring	54						
Round Valley				50	Winter/Spring	55	150 58	Winter Spr/Summer/Fall	78			
San Felipe/ Peck Canyon	140	Winter/Spring	271	175 (39)	Winter/Spring Summer/Fall	239	570 333	Winter Spr/Summer/Fall	349			
Warm Springs				200	Winter/Spring	221	210 315	Winter Spr/Summer/Fall	219			
Garden Creek	40	Winter/Spring	25	1,025	Winter/Spring	1130	40	Yearlong	33	80	Winter/Spring	83
Bald Mountain	10	Winter/Spring	19	1,000	Winter/Spring	1102						
Thompson Creek	38	Winter/Spring	73	250	Winter/Spring	276						
Split Hoof				200	Winter/Spring	221	30	Spr/Summer/Fall	14			
Squaw Creek	36	Winter/Spring	70	284	Winter/Spring	316						
Spud Creek	5	Winter/Spring	10	290	Winter/Spring	319	120 15	Winter Spr/Summer/Fall	47	25	Winter/Spring	25
Pine Creek				200	Winter/Spring	221						
East Fork	5	Winter/Spring	10	300	Winter/Spring	330				85	Winter/Spring	88
Sullivan Creek	5	Winter/Spring	10	150	Winter/Spring	165	20	Spr/Summer/Fall	9			
Malm Gulch												
Total	317		561	5,624		6,166	1,160 906	Winter Spr/Summer/Fall	818	220		227

TABLE 8-56

PROPOSED RANGE IMPROVEMENTS AND VEGETATION MANIPULATIONS
ALTERNATIVE 6

					VEGETATION MANIPULATION		
ALLOTMENT (ACRES)	FENCING (MILES)	SPRING DEVELOPMENTS	WATER PIPELINES (MILES)	WATER TROUGHS	BRUSH BEAT (ACRES)	PLOW & SEED (ACRES)	BURN (ACRES)
Red Lake		6	2.5	4	1200		
Herd Creek	None	None	None	None	None	None	None
Road Creek	None	7	8	2	None	None	None
Bruno Creek	None	None	None	None	None	None	None
Round Valley	None	3	5	1	None	None	None
SanFelipe/Peck Canyon	24	7	11.5	10	8600	None	None
Warm Springs	11	7	5.5	5	7500	None	None
Garden Creek	4	None	7	5	1295	1310	None
Bald Mountain	4.75	None	3.7	3	1500	None	None
Thompson Creek	None	None	None	None	None	None	None
Split Hoof	6	6	None	None	330	None	None
Squaw Creek	1.5	1	None	None	650	None	None
Spud Creek	1.8	4	.3	None	None	None	None
Pine Creek	None	5	None	None	None	None	None
East Fork	1	5	1	1	None	None	1000
Sullivan Creek	None	None	None	None	None	None	None
Malm Gulch	----	----	----	----	----	----	----
Total	54.1	51	44.5	31	21,075	1,310	1,000

Note: All projects would be implemented the first 5 years except for two brush-beating projects; 1,000 acres in the Warm Springs Allotment and 1,500 acres in the Bald Mountain Allotment, which would be accomplished in four treatments of one-fourth of the area at 3-year intervals; the entire project completed in 12 years.

deferral of spring use would result in more rapid favorable response by vegetation. Those allotments with seasonal grazing would respond favorably but at a slower rate.

Tables 8-58, 59 and 60 illustrate the projected data for vegetation condition, trend, and availability of AUMs after 15 years under Alternative 6.

A summary of the condition, trend, and available AUMs for this alternative is as follows:

Vegetation Condition	Present Acres	Future Acres	Percent Change
Good	33,815	101,409	+200
Fair	145,440	109,478	- 25
Poor	103,567	71,935	- 31
Rock, Doug. Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Trend in Condition	Present Acres	Future Acres	Percent Change
Up	12,790	112,099	+776
Down	72,977	570	- 99
Static	197,055	170,153	- 14
Rock, Doug. Fir, Burned Areas	47,300	47,300	0
Total	330,122	330,122	

Range Improvements

Construction of range improvements would temporarily remove about 76 acres from production and permanently remove approximately ten acres. Average recovery time would be approximately five years.

In addition to range improvement construction, there would be 23,385 acres initially disturbed by vegetation manipulations (see Table 8-57).

The overall impact of brush beating 21,075 acres would be a change in species composition toward more grass and forbs for livestock, wild horses and wildlife. The long-term impact would be an increase in forage production from about 90 pounds per acre to 120 pounds per acre. Range condition of these acres would be expected to improve one condition class.

Plowing and seeding of desirable grass, forbs and browse species on 1,310 acres would have a short-term impact from production for not more than eight years. The long-term impact is expected to increase production from approximately 60 pounds per acre to 250 pounds per acre, with vegetation density increasing 100 percent. Range condition would be expected to change to "good" condition. Increases would be primarily livestock and wild horse forage.

Burning would have a short-term impact of removing vegetation cover the first spring season of the burning (1,000 acres). Long-term impact would be to change species composition toward more grass and forbs and an expected increase in forage production from approximately 120 pounds per acre to 140 pounds per acre. Range condition should change one class on the acreage receiving treatment.

Sediment Yield

As a result of increased vegetation and litter cover from 15 years under this alternative, sediment yield would change from about 1.32 tons/acre to an average of .73 tons/acre in the unit. This would be approximately a 45 percent reduction. Total sediment yield would be 240,000 tons annually for the Challis Unit.

Wildlife-Terrestrial

Beneficial and adverse impacts are discussed in Table 8-61. Predictions of wildlife replacement, losses and displacement, as a result of this alternative can be determined using Appendix 3A, 3B and 3C.

Wildlife-Aquatic

A reduction in the level of grazing by large ungulates of 4,538 AUMs per year would not significantly improve aquatic habitat in the unit except where riparian areas would be fenced to exclude livestock and wild horse grazing.

The impacts of this alternative on Herd and Lake Creeks would be the same as those resulting from implementation of Alternative 4 (Minimum Constraints on Wildlife).

In the Road Creek drainage, fencing projects and reduced wild horse and livestock grazing would improve 14.8 miles of fish producing streams. Erosion in the drainage would decrease (see soild section of this alternative), benefiting downstream anadromous fish habitat in the East Fork River. A total of 14 miles of resident trout habitat in the Road Creek watershed would improve from "poor" to "fair" condition. Also, as streamside vegetation and stream stability increased following fencing, 0.8 miles of Road Creek trout habitat would improve from "fair" to "good" condition.

Wild Horses

A change in numbers of wild horses from approximately 586 animals to approximately 80 animals would result in widly dispersed bands of horses. This could lead to significant breeding problems.

TABLE 8-57

EXPECTED ACREAGE DISTURBED BY PROPOSED IMPROVEMENTS
ALTERNATIVE 6

Range Improvements	Unit	Total	Acres Disturbed per Unit		Total Acres Disturbed	
			Short-term a/	Long-term b/	Short-term a/	Long-term b/
Fencing	Miles	54.1	1	.002	54.1	1
Water Developments						
Spring Developments	No.	51	.2	.2	10.2	10.2
Water Pipelines	Miles	44.5	.2	-	8.9	-
Water Troughs	No.	31	.1	-	3.1	-
Brush Beat	Acres	21,075	1	-	21,075	-
Plow and Seed	Acres	1,310	1	-	1,310	-
Burn	Acres	1,000	1	-	1,000	-
Total					23,461.3	11.2

a/ Short-term means 5 years from start of project.

b/ Long-term means at least 15 years or the term of the proposed action.

TABLE 8-58

PRESENT AUMs AVAILABLE TO LIVESTOCK COMPARED TO FUTURE AUMs AVAILABLE TO LIVESTOCK AFTER FIFTEEN YEARS UNDER THE REDUCED LEVEL OF GRAZING ALTERNATIVE

Allotment	Current AUMs Available For Livestock	Future AUMs Available For Livestock
Red Lake	613	1,233
Herd Creek	1,411	1,411
Road Creek	346	810
Bruno Creek	85	213
Round Valley	438	808
San Felipe	3,484	7,163
Warm Springs	2,201	5,354
Garden Creek	600	1,166
Bald Mountain	296	459
Thompson Creek	51	65
Split Hoof	118	285
Squaw Creek	133	299
Spud Creek	202	461
Pine Creek	181	360
East Fork	192	398
Sullivan Creek	85	144
Malm Gulch	0	0
Total	10,436	20,629

TABLE 8- 59

PRESENT VEGETATION CONDITION COMPARED TO FUTURE CONDITION AFTER FIFTEEN YEARS IF ALTERNATIVE 6 IS ADOPTED (ACRES)

	Present				Reduced Level of Grazing			
Allotment	Good	Fair	Poor	Rock/ Douglas-Fir/Burn	Good	Fair	Poor	Rock/ Douglas-Fir/ Burn
Red Lake	2,186	9,217	8,251	3,541	7,580	5,876	6,198	3,541
Herd Creek	8,292	6,637	2,138	4,983	*	*	*	4,983
Road Creek	1,800	9,430	2,250	2,085	4,781	6,550	2,149	2,085
Bruno Creek	494	537	76	1,271	793	314	0	1,271
Round Valley	6,010	3,978	2,596	919	9,924	64	2,596	919
San Felipe	3,370	32,272	39,267	6,407	21,328	27,621	25,960	6,407
Warm Springs	5,063	36,513	15,839	2,288	27,018	25,257	5,140	2,288
Garden Creek	699	16,726	8,988	4,045	6,107	12,177	8,129	4,045
Bald Mountain	329	5,977	7,507	8,726	1,032	5,954	6,825	8,726
Thompson Creek	276	2,119	785	2,415	409	2,056	715	2,415
Split Hoof	-	5,153	2,759	503	1,779	3,500	2,633	503
Squaw Creek	760	1,036	2,651	2,597	1,009	1,893	1,545	2,597
Spud Creek	307	3,568	2,797	2,184	3,493	441	2,738	2,184
Pine Creek	-	3,903	559	564	1,170	2,733	559	564
East Fork	61	4,861	4,384	2,404	1,102	4,819	3,385	2,404
Sullivan Creek	4	1,383	512	1,671	462	1,054	383	1,671
Malm Gulch	4,166	2,130	2,208	692	*	*	*	692
Totals	33,815	145,440	103,567	47,300	101,409	109,478	71,935	47,300

* Indicates no change from the proposed action.

TABLE 8- 60

PRESENT TREND IN VEGETATION CONDITION COMPARED TO FUTURE TREND AFTER FIFTEEN YEARS IF ALTERNATIVE SIX IS ADOPTED (ACRES)

	PRESENT				REDUCED LEVEL OF GRAZING			
ALLOTMENT	UP	DOWN	STATIC	ROCK/DOUG FIR/BURN	UP	DOWN	STATIC	DOUGLAS FIR, ROCK, AND BURN AREAS
Red lake	-0-	3,630	16,024	3,541	7,447	-0-	12,207	3,541
Herd Creek	-0-	570	16,497	4,983	*	570	*	4,983
Road Creek	-0-	4,789	8,691	2,085	3,082	-0-	10,398	2,085
Bruno Creek	-0-	-0-	1,107	1,271	404	-0-	703	1,271
Round Valley	-0-	-0-	12,614	919	3,914	-0-	8,671	919
SanFelipe	3,960	24,500	46,449	6,407	35,224	-0-	39,684	6,407
Warm Springs	-0-	23,450	33,965	2,288	32,654	-0-	24,761	2,288
Garden Creek	-0-	6,970	19,443	4,045	6,267	-0-	20,146	4,045
Bald Mountain	3,670	2,630	7,511	8,726	5,057	-0-	8,754	8,726
Thompson Creek	2,020	520	640	2,415	2,223	-0-	957	2,415
Split Hoof	-0-	2,600	5,312	503	1,905	-0-	6,007	503
Squaw Creek	-0-	650	3,797	2,597	1,355	-0-	3,092	2,597
Spud Creek	620	-0-	6,052	2,184	3,865	-0-	2,807	2,184
Pine Creek	-0-	-0-	4,462	564	1,170	-0-	3,292	564
East Fork	2,520	-0-	6,786	2,404	4,560	-0-	4,746	2,404
Sullivan Creek	-0-	1,648	250	1,672	587	-0-	1,311	1,672
Malm Gulch	-0-	1,020	7,425	691	*	*	*	691
Totals	12,790	72,977	197,055	47,300	112,099	570	170,153	47,300

* Indicates no change from proposed action.

TABLE 8-61

IMPACTS TO TERRESTRIAL WILDLIFE
SIGNIFICANTLY LESS COW AND HORSE GRAZING
ALTERNATIVE 6

	NON-GAME WILDLIFE	DEER	ELK
Allocation of Forage	Same as proposed action except reduction in wild horse and livestock forage consumption would leave more food and cover (resting, nesting and thermal cover) for non-game. Habitat quality and quantity increased. Carrying capacity and diversity decreased.	Same as proposed action except more spring forage would be available on areas unsuitable to livestock. Reduced competition on spring ranges. Increased carrying capacities.	Same as proposed action except impacts from competition for spring and winter forage would be reduced, especially on suitable areas. Habitat quality as well as carrying capacities would increase.
Turnout Dates	Same as proposed action except adverse impacts lessened.	→	→
Grazing Systems	Same as proposed action.	→	→
Ecological Change	Accelerated rates of improved condition would provide more food and cover. Quality and quantity of habitat would increase, especially on suitable areas. Carrying capacity and diversity would increase.	→	Accelerated rates of improved vegetation condition on suitable areas will enhance habitat by increasing forage. Carrying capacity would improve.
Social Interaction	Adverse impacts would be the same as the proposed action but decreased due to reduced cow and horse numbers and nonuse of unsuitable areas.	Social interaction with horses decreased. Reduced stress to deer. Frequency of interaction with livestock also reduced.	Same as proposed action.
Use of Riparian Zones by Livestock and Horses	Same as proposed action except habitat improvement in riparian zones would be improved where fences are built to keep out livestock and horses.	→	Same as proposed action but adverse impacts decreased.
Reduction in Horse Numbers	Significantly reduce social and physical interaction as well as associated stress, habitat improved. Increased carrying capacity and diversity.	Significantly reduce chance of social interaction. Increase quality of deer habitat.	Would eliminate all or most adverse impacts associated with horses.
Water Developments	Same as proposed action.	→	→
Fences	Same as proposed action.	→	→
Brush Beating	Same as proposed action.	→	No impact.
Burning	Same as proposed action.	→	→
Plow and Seed	Same as proposed action.	→	No impact.
Land Development	No impact.	Same as proposed action.	No impact.

TABLE 8-61

IMPACTS TO TERRESTRIAL WILDLIFE
SIGNIFICANTLY LESS COW AND HORSE GRAZING
ALTERNATIVE 6

	ANTELOPE	BIGHORN SHEEP	UPLAND GAME BIRDS (SAGE GROUSE/BLUE GROUSE)
Allocation of Forage	Reduce forage competition between cows, horses and antelope on spring and summer range. Increased habitat condition and carrying capacities.	Same as proposed action but somewhat lessened adverse impacts due to reduced livestock numbers.	Same as proposed action but beneficial impacts greater.
Turnout Dates	Same as proposed action except adverse impacts lessened.	→	→
Grazing Systems	Same as proposed action.	→	→
Ecological Change	Accelerated rates of improved vegetation on spring-summer range would increase forage, especially on areas suitable for livestock. Improved habitat quality and quantity. Reduce stress to pregnant and lactating does. Increased carrying capacity.	Areas presently in poor condition and suitable to livestock would increase a condition class. Forage for bighorn would increase. Increased habitat quality and quantity as well as carrying capacity.	Increased forb/grass components of habitat will increase habitat quality.
Social Interaction	Same as proposed action but lessened.	→	→
Use of Riparian Zones by Livestock and Horses	Same as proposed action.	→	Riparian habitats used by upland game, where fenced, would be enhanced. This would increase food and cover for birds. Habitat quality, especially as related to brood rearing, would increase.
Reduction in Horse Numbers	Reduction of horses would reduce social interaction and competition for forage. Increased habitat quality.	No impact.	Same as proposed action.
Water Developments	Same as proposed action.	No impact.	Same as proposed action.
Fences	Proposed fences on Road Creek would cause some immediate mortality until antelope adjust to fence and locate water gaps. Impacts would be short-term.	Same as proposed action.	Same as riparian zones.
Brush Beating	Same as proposed action.	No impact.	Same as proposed action.
Burning	Same as proposed action.	→	→
Plow and Seed	No impact.	→	→
Land Development	Same as proposed action.	→	No impact.

Kirkpatric (1978) indicates that in the Pryon Mountain Wild Horse Area, a herd of 75 animals is the minimum number for breeding a healthy, viable herd. At the stocking level of 80 wild horses, this minimum level is being approached.

Protecting Malm Gulch and Sand Hollow watershed from wild horse grazing would have no impact to the herd at the 80 wild horse level.

Implementation of rest-rotation systems for livestock grazing management, installation of range improvement projects and vegetation manipulation projects would have the same kinds of impacts as in the proposed action. It is impossible to quantify the difference in intensity of impact, but the lower level of stocking of wild horses and cattle would reduce the impact.

Livestock Grazing

Implementation of Alternative 6 would significantly effect livestock operations in the Challis Unit. Impacts to the livestock operators concerning adjustment in AUMs of use are displayed and discussed in the Socio-Economic section.

Establishment of Alternative 6 season of use (Table 8-62) would cause six of the total 38 operators to be restricted from both summer and fall grazing currently allowed. Six would no longer be allowed summer grazing, three would no longer be allowed fall grazing, and one would have the winter season shortened one month.

The seasonal restriction from current use of the public lands would require these 16 livestock operators to adjust their total operation.

To compensate reductions of AUMs and loss of grazing on public lands primarily in spring, summer, and fall, livestock operators would either have to buy hay, lease pasture, or reduce numbers.

TABLE 8-62

CHANGE IN TOTAL AUMs AND CATTLE NUMBERS
RESULTING FROM ALTERNATIVE 6, CHALLIS UNIT

Present Use		Alternative 6 Level of Use		Change Resulting From Alternative 6	
AUMs	Cattle Numbers	AUMs	Cattle Numbers	AUMs	Cattle Numbers
17,444	7,700	7,158	2,660	10,286	5,040

If the forage (10,286 AUMs) identified in Table 8-62 were replaced by hay, it would require 4,114 tons annually.

There is very little irrigated or dry pasture available to lease in the Challis area. The only alternative for many of the range users may be to reduce their herds. It is impossible to predict the change in number of cattle raised in Custer County as a result of Alternative 6 because of the difference in capability of each operator to adjust his livestock operation. The change would probably be something less than the 5,040 cattle numbers in Table 8-62.

After 15 years under this alternative there would be increased production of forage as a result of better management of the range. This would amount to 13,501 AUMs that could be allocated to livestock. At the time additional forage is determined available for grazing use an allocation would be made to grazing animals through the BLM planning system. For purposes of analysis, these 13,501 AUMs are considered for livestock use in the future.

Initial stocking rate	7,128 AUMs
Increased production after 15 years	13,501 AUMs
Total	20,629 AUMs

This would be 3,185 AUMs more than the present eight-year average use.

Economics

Under the livestock stocking level for Alternative 6, the average rancher would experience a 225-AUM decrease (for purposes of these calculations, the largest operator was excluded so the distribution would not be skewed). The following tables show the economic impacts of buying hay, grazing on private land, and changing herd size.

The average rancher would have to spend $4,500 for buying hay to supplement the AUM loss, $1,350 to graze on private land to supplement the AUM loss, or lose approximately $10,918 from reducing herd size.

Income loss for all 38 livestock operators could amount to $415,000. Potential secondary reduction to Custer County income would approximate $138,000.

After 15 years under this alternative net annual income to the average rancher would amount to $3,994. This would total (annually) $151,772 for the 38 operators.

TABLE 8-63

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ALTERNATIVE 6
GRAZING ON PRIVATE LAND

	Average per Ranch 1975
Returns	
Sale of Calves	$18,509
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	27,073
Expenses	
Land Rent	400
Feed	10,360
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	34,450
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-7,377
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-5,444

TABLE 8- 64

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ALTERNATIVE 6
BUYING OF HAY

	Average per Ranch 1975
Returns	
Sale of Calves	$18,509
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	27,073
Expenses	
Land Rent	400
Feed	5,860
Livestock Expenses	5 922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	29,950
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-2,877
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-944

TABLE 8-65

AVERAGE RETURNS FOR 10 RANCHERS
CUSTER COUNTY, IDAHO 1975
ALTERNATIVE 6
HERD REDUCTION

	Average per Ranch 1975
Returns	
Sale of Calves	$10,918
Sale of Yearlings	5,222
Sale of Cull Cows and Bulls	2,790
Other Receipts	522
Gross Returns	19,482
Expenses	
Land Rent	400
Feed	5,860
Livestock Expenses	922
Livestock Purchased	8,197
Insurance	787
Labor Expense	3,676
Taxes	2,007
Seed	879
Fertilizer	302
Machinery Operating Expenses	2,519
Repairs	1,787
Utilities	616
Federal Grazing Fees	896
Association Fees	743
Supplies	169
Misc. Expense	190
Total Cash Expenses	29,950
Net Ranch Cash Income (Gross returns minus Cash Expenses)	-10,468
Estimated Ranch Perquisites	727
Change in Inventory	1,206
Net Ranch Income (Net Ranch Cash Income Plus or Minus Change in Inventory and Ranch Perquisites)	-8,535

TABLE 8-66
ECONOMIC IMPACTS OF ALTERNATIVE 6 ON RANCHERS IN THE CHALLIS ES AREA

OPERATOR	ACTIVE AUMs	AVERAGE AUMs	PROPOSED AUMs	LOSS FROM ACTIVE	PERCENTAGE LOSS	LOSS FROM AVERAGE	PERCENTAGE LOSS	DEPENDENCY ON BLM AUMs
Baker, Eddie	290	283	63	227	-78.28	220	-77.74	8.05
Baker, Richard	213	209	46	167	-78.40	163	-77.99	7.24
Bennetts, Jim	135	135	135	0	0.00	0	0.00	11.23
Bishop, Laura	358	346	116	242	-67.60	230	-66.47	27.07
Bradshaw, Eugene	57	56	48	9	-15.79	8	-14.29	15.73
Bradshaw, Kenneth	172	119	61	111	-64.53	58	-48.74	25.50
Carlisle, Lewis	539	228	50	489	-90.72	178	-78.07	35.88
Chivers, Garth	278	16	91	187	-67.27	-75	468.75	15.42
Cominotti, Fabio	264	246	55	209	-79.17	191	-77.64	11.45
Corrigan, Dick	88	78	27	61	-69.32	51	-65.38	14.97
Cutler, Howard	180	148	52	128	-71.11	96	-64.86	11.52
Ennis, Mrs. James L	134	127	55	79	-58.96	72	-56.69	31.72
Hammond, John	183	147	37	146	-79.78	110	-74.83	12.69
Hammond, Robert	38	17	13	25	-65.79	4	-23.53	12.57
Hanson, Margaret	465	383	102	363	-78.06	281	-73.37	15.99
Helm, Calvin	104	39	32	72	-69.23	7	-17.95	7.86
Horning, Tim	24	9	5	19	-79.17	4	-44.44	24.39
Ingram, Will	5,542	4,521	2,903	2,639	-47.62	1,618	-35.79	24.83
Jan Mar Corp.	904	385	183	721	-79.76	202	-52.47	30.11
Keppner, Ray	230	199	46	184	-80.00	153	-76.88	7.66
Laverty, Ray	141	1	43	98	-69.50	-42	100.00	12.47
Leuzinger, George	65	41	23	42	-64.62	18	-43.90	7.72
Leuzinger, Jake & Son	186	145	17	169	-90.86	128	-88.28	20.61
Maraffio, Frank	300	226	101	199	-66.33	125	-55.31	14.27
Peck, Joseph	262	72	53	209	-79.77	19	-26.39	39.55
Pedrini Brothers	181	181	116	65	-35.91	65	-35.91	11.58
Philps, Ethel	155	136	31	124	-80.00	105	-77.21	3.78
Piva Brothers	413	337	126	287	-69.49	211	-62.61	4.92
Pleus, Herman	50	25	42	8	-16.00	-17	68.00	13.80
San Felipe Ranch	8,375	7,396	1,938	6,437	-76.86	5,458	-73.80	23.26
Sherwood, Archie	55	45	20	35	-63.64	25	-55.56	11.34
Smith, Kenneth	55	36	11	44	-80.00	25	-69.44	14.68
Stark, Kenneth	15	9	3	12	-80.00	6	-66.67	4.14
Stevens, Robert	29	7	6	23	-79.31	1	-14.29	4.01
Westgard, Gean	240	48	84	156	-65.00	-36	75.00	7.99
Westgard, Golden	155	155	55	100	-64.52	100	-64.52	3.23
Wooley, Dan	552	429	147	405	-73.37	282	-65.73	25.27
Yates, Ralph	473	467	219	254	-53.70	248	-53.10	15.33
Totals	21,900	17,447	7,155	14,745		10,292		

Public Values and Attitudes

The social impacts resulting from this alternative are the same in kind as the proposed action. Variation is in intensity and this cannot be quantified.

Water

Water Use. Water consumption by grazing animals proposed for this alternative would consume 3,492,180 gallons per year. This would result in a decrease of 6,998,832 gallons per year below water consumed by grazing animals presently occupying the Challis Planning Unit.

Streamflow. An unmeasurable effect to streamflow would result from implementing this alternative. See Proposed Action.

Water Quality. Water quality impacts are the same as the proposed action.

TABLE 8-67

CONSUMPTIVE WATER REQUIREMENTS FOR LIVESTOCK,
WILD HORSES AND WILDLIFE UNDER ALTERNATIVE #6

Animal	Animal Months/Year	Gallons per Animal/Month	Total Gallons per Year
Livestock	7,128	300	2,138,400
Wild Horses	960	375	360,000
Deer	38,846	15	582,690
Antelope	3,926	30	117,780
Elk	1,683	150	252,450
Bighorn Sheep	681	60	40,860
			3,492,180 Gallons/Year

Recreation

There will be no significant impact to the recreation resource as a result of the proposal in Alternative 6.

Cultural Resources

Damage and destruction would continue to occur at known cultural resource sites (268 sites) for three years. This would continue until the proposed cultural resource management activity plan could be initiated. These sites are unique and vulnerable to all levels of ground-disturbing activities, including trampling by livestock and streambank and gully erosion.

Damage to unknown sites and subsurface sites not discovered during project surveillance would be almost certain to occur. In cases where salvage mitigation is required, the impact would not be fully mitigated. Salvage of cultural resources is an unavoidable adverse impact. Once excavated, a site is effectively destroyed and removed from future research considerations which may utilize new techniques. Salvage is rarely as effective as non-salvage research programs, partially because of time limitations, funding, and personnel competence. Emergency salvage, required by unexpected discoveries during project initiations, would be even less effective.

Reduction in the rate of soil erosion resulting from Alternative 6 would cause a slower rate of damage to most of the cultural resources. The level of stocking of livestock and wild horses would result in less trampling damage to the resource than is occurring under present conditions.

CHAPTER 8

SUMMARY

TABLE 8-68

PREDICTED INFLUENCES OF PROPOSED ACTION AND ALTERNATIVES IN THE CHALLIS UNIT

Resource or Component	Present Situation	Proposed Action	No Action	No Grazing	Livestock Maximized	Wildlife Maximized	Wild Horse Maximized	Reduced Grazing Level
Vegetation Condition (Acres)								
Good	33,815	88,260	36,200	126,642	74,052	102,000	78,316	101,409
Fair	145,440	117,846	117,381	90,484	116,281	110,714	122,741	109.478
Poor	103,567	76,716	129,241	65,696	92,489	70,108	81,765	71,935
Rock, Douglas Fir and Burn	47,300	47,300	47,300	47,300	47,300	47,300	47,300	47,300
Total	330,122	330,122	330,122	330,122	330,122	330,122	330,122	330,122
Trend in Condition (Acres)								
Up	12,790	94,144	12,790	149,303	64,725	113,589	79,145	112,099
Down	72,977	570	72,977	570	1,137	570	570	570
Static	197,055	188,107	197,055	132,949	216,960	168,663	203,107	170,153
Rock, Douglas Fir and Burn	47,300	47,300	47,300	47,300	47,300	47,300	47,300	47,300
Total	330,122	330,122	330,122	330,122	330,122	330,122	330,122	330,122
Soil (Sediment Yield)	1.3 tons/acre 437,000 tons	.87 tons/acre 288,000 tons	1.45 tons/acre 480,000 tons	.49 tons/acre 162,000 tons	.87 tons/acre 288,000 tons	.84 tons/acre 278,000 tons	.95 tons/acre 315,000 tons	.73 tons/acre 240,000 tons
Wildlife-Terrestrial Populations								
Deer	5,141	5,624 c/	5,624 a/	5,624 b/	5,624 a/	5,624 c/	5,624 c/	5,624 c/
Elk	267	317 c/	317 a/	317 b/	317 a/	317 c/	317 c/	317 c/
Antelope	W 910– S 613	W 1,160– S 906 c/	W 1,160– S 906 a/	W 1,160– S 906 b/	W 1,160– S 906 a/	W 1,160– S 906 c/	W 1,160– S 906 c/	W 1,160– S 906 c/
Bighorn	87	220 c/	220 a/	220 b/	220 a/	220 c/	220 c/	220 c/

a/ Population levels presented and IOFG population objectives would be achieved in 15 years but forage conditions would not maintain them. Annual population fluctuations would be expected including high and low extremes.

b/ Available forage could support population levels above the present IDFG objectives, if desired.

c/ Allocated forage could support and maintain population levels presented.

TABLE 8-68

PREDICTED INFLUENCES OF PROPOSED ACTION AND ALTERNATIVES IN THE CHALLIS UNIT

Resource or Component	Present Situation	Proposed Action	No Action	No Grazing	Livestock Maximized	Wildlife Maximized	Wild Horse Maximized	Reduced Grazing Level
Wildlife-Aquatic								
Miles of Habitat by Condition Class								
Anadromous and Resident Fish:								
Poor	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Fair	12.05	11.30	12.05	10.05	12.05	10.85	11.30	10.85
Good	26.15	26.40	26.15	25.70	26.15	24.35	26.40	24.35
Excellent	4.80	5.30	4.80	7.25	4.80	7.80	5.30	7.80
Resident Fish:								
Poor	18.6	18.6	19.4	-0-	18.6	4.6	18.6	4.6
Fair	19.8	17.8	19.0	21.6	19.8	29.5	17.8	29.5
Good	1.9	3.9	1.9	18.7	1.9	6.2	3.9	6.2
Wild Horse	586	162	300	None	91	141	340	80
Allocation to Animals (AUMs)								
Livestock	17,444	10,436	17,444	-0-	12,456	9,202	10,100	7,128
Wild Horses	8,790	2,430	8,790	-0-	1,381	2,115	4,890	1,200
Wildlife (Big Game)	595 a/	7435/337 b/	595 a/	7772/0	6332/0	7435/337	7435/337	7435/337
Livestock Grazing								
Initial Stocking Rate (AUMs)	17,444	10,436	17,444	None	12,456	9,202	10,100	7,128
Forage Available for Livestock After 15 Years, AUMs (No Grazing Alternative-Not Available to Livestock)		17,369	14,201	24,190	15,172	20,369	15,723	20,629
Change in Production		+6,933	-3,243	+13,754	+2,716	+11,167	+5,623	+13,501
Economic								
Annual Net Income Challis Unit (Short-Term) if Ranchers Reduce Herd Size	-38,000	-345,000	About the Same As Present Situation	-538,000	-245,000	-371,000	-354,000	-453,000
Annual Net Income Challis Unit After 15-Years		About the Same As Present Situation	-227,240	-538,760	-170,012	+136,458	-137,522	+151,772

a/ AUMs reserved for wildlife 1945-1958 adjudication procedures. These AUMs were not assigned to any specific big game animals or season of use.

b/ Noncompetitive AUMs/Competitive AUMs - Noncompetitive AUMs are from areas unsuitable to livestock, mainly due to steep terrain.

Chapter 9

Consultation and Coordination

TEAM ORGANIZATION

A team consisting of resource specialists from the BLM Idaho State Office and BLM Salmon District was assembled and met on June 19, 1978, at the Idaho State Office Annex in Boise. Preliminary review was handled by the Idaho State Office.

CONSULTATION IN PREPARATION OF THE DRAFT SUPPLEMENTAL ENVIRONMENTAL STATEMENT

Consultations at a working level with Departmental and BLM Washington Office personnel with special expertise were used to formulate the proposed action. In addition, informal, local-level contacts were made with various governmental agencies, organizations, and individuals. These contacts included telephone calls, personal interviews, informational meetings, field trips, and workshops. Subjects most often discussed included range inventory and suitability studies, soils inventory, proposed grazing systems, forage allocation, wildlife and fisheries problems and the timeframe within which the draft supplement must be published. Those participating in consultations prior to the draft include:

Custer County Economic Stablization Committee
Idaho Society For Protection of Mustangs and Burros
Natural Resources Defense Council
American Humane Association
Idaho Department of Fish and Game
University of Idaho
Livestock Industry Representatives
Numerous livestock operators and other interested individuals

COORDINATION IN REVIEW OF THE DRAFT SUPPLEMENTAL ENVIRONMENTAL STATEMENT

See the list of agencies and organizations identified to review the statement at the beginning of this document following the summary page.

Appendices

APPENDIX 1-A

BLM MULTIPLE USE PLANNING

The basic process used to develop land use plans (Management Framework Plans) is as follows:

Inventory. Basic data is gathered concerning the seven basic resource programs: lands, minerals, forestry, range, watershed, wildlife habitat and recreation which includes historical, cultural and archaeological data. Data from a variety of sources is gathered including both primary and secondary information.

Unit Resource Analysis (URA). For a defined geographic area called a planning unit, the URA consists of four steps:

Step 1: Definition of the planning unit and preparation of a base map

Step 2: Preparation of a physical profile including climate, topography, geology and soils, vegetation, water resources, animals, fire, limiting physical factors and developments

Step 3: Description of the present situation including use, problems, production, trend, etc., for each of seven resource categories based on all available inventory and information

Step 4: Management opportunities are analyzed and recorded for each of the seven resource categories

Social-Economic Profile (SEP). For an identified economic region, a Social-Economic Profile is an information document used to gather, organize, analyze and record social and economic information required for the development of a Management Framework Plan. This information is used or input to the Planning Area Analysis to help evaluate the significance of resource values.

Planning Area Analysis (PAA). The Planning Area Analysis analyzes social, economic, environmental and institutional values of the resources in the geographic area which will be covered by a Management Framework Plan. The PAA provides a data base to consider socio-economic conditions and implications for resource management.

Management Framework Plan (MFP). The Bureau's land use plan establishes coordinated land use allocations for all resources for a specific land area. The MFP process results in a "best mix" of how the various resources will be managed to provide the maximum benefit to the public. The MFP consists of three steps:

MFP Step 1: A specialist for each of the various resource categories develops objectives and specific recommendations which would maximize production, use and maintenance of each resource. At this point, these recommendations are not multiple use oriented in order to recognize full potential.

MFP Step 2: The conflicts and interrelationships of the MFP Step 1 recommendations are analyzed in depth, along with socio-economic factors. The impacts of the recommendations are accepted, rejected or modified as required to develop sets of recommendations which will result in management for multiple use--a "best mix." Public participation is most intense in this step of the planning process.

MFP Step 3: The information and analysis from MFP Step 2 is used to reach and record planning decisions for each of the major resource programs or categories in the planning area. Cumulative environmental impacts are summarized, map overlays prepared and a summary of the decisions publicized.

Public Participation. The public is involved throughout the planning process in order to insure sound information, identify major issues or problems and to help resolve conflicts in resource use. A variety of techniques are commonly used to include public input at three major periods; before planning begins, during the planning process, and notification of management decisions in the completed land use plan.

Activity Plans. After completion of the land use plan, specific projects and on-the-ground actions are prepared to implement provisions of the management decisions.

APPENDIX 1-B

CRITERIA USED TO DETERMINE ALLOCATIONS FOR PROPOSED ACTION AND ALTERNATIVES

General Background

The allocation of forage to the grazing ungulates in the Challis Unit was made after the biological limits for the health of the plants was determined. The biological limits for the vegetation involved provided at least 50 percent of the vegetation for plant maintenance, non-game wildlife, and watershed needs in the proposed action and alternatives.

Proposed Action

After determining the biological limits of the vegetation involved, suitability was applied to livestock and the suitability applied to wild horses as shown on Attachment 1.

Based upon public input, management feasibility, and critical winter range, the wild horse average numbers (162) was calculated as follows: Where livestock and wild horses have dietary and habitat overlap areas, the competitive AUMs involved went to the wild horses. The range of horses to be managed for was 100 to 202 animals and the number to be allocated for (162) was determined by using 80 percent of the maximum (200). The 80 percent figure was determined sufficient enough to increase forage in low population years to provide adequate forage when horses are nearing the maximum population. This allocation takes into account a 20 percent annual horse reproductive rate and a 4-year reduction in numbers cycle, which is the most economical schedule.

Cattle were allocated the remaining AUMs in each overlap area in each allotment plus the non-competitive AUMs throughout the five allotments where horses exist. Cattle were allocated all of the non-competitive AUMs in the remaining allotments without horses. Herd Creek will remain as is with current AMP and AUMs.

Practically all AUMs needed for present and future big game populations were allocated from areas unsuitable for livestock and wild horse grazing (7,435 AUMs). In those areas where dietary conflicts arose with livestock and/or wild horses, big game received first allocation to meet its needs (337 AUMs).

Maximize Livestock - See memorandum from State Director (Appendix 2-C) for suitability criteria rationale for this alternative.

Livestock - Livestock AUMs were allocated on the basis of dietary/habitat overlap areas with wild horses and/or wildlife. All of the competitive AUMs were given to livestock. Twenty percent of the forage on slopes greater than 50 percent was also allocated to livestock. Herd Creek would remain as presently used.

Wild Horses - All non-competitive AUMs in the critical horse wintering areas were given to the wild horses. All AUMs on low production areas (32 acre+/AUM) were given to the horses.

Wildlife - Practically all AUMs demanded by big game are found in areas unsuitable by both livestock and wild horses. The livestock did, however, receive all the AUMs in dietary overlap areas. Wildlife AUMs were reduced accordingly. Additional non-competitive AUMs (1,103) on slopes over 50 percent were taken away from big game and allocated to livestock.

Maximize Wild Horses - See memorandum from State Director (Appendix 2-C) for suitability criteria rationale for this alternative.

Wild Horses - All AUMs horses could use, based upon the critical wild horse wintering areas, were allocated. The wintering areas (critical) are the limiting factor.

Livestock - Livestock were given all the non-competitive AUMs in horse areas by taking dietary and competitive overlap into consideration. In the non-wild horse allotments, livestock AUMs were allocated as in the proposed action. Herd Creek AMP and allowable AUMs would remain status quo.

Wildlife - Big game allocation was the same as in proposed action.

Maximize Wildlife

Wildlife - Big game allocation was the same as in the proposed action. All turnout dates would be held to June 15 for livestock to reduce early spring grazing conflicts, at least with livestock. Livestock use would also be eliminated from the bighorn sheep winter ranges.

Livestock - To reduce competition, turnout dates would be delayed until June 15. After calculating the dietary/habitat overlap areas with big game the livestock received the remaining AUMs. In the wild horse areas, the proposed action mix based upon dietary and habitat overlap determined the allowable AUMs. See Proposed Action (A). An area of 31.8 square miles would be fenced to exclude livestock and horses from grazing to improve downstream siltation conditions in Road Creek and the East Fork River. These AUMs would be dropped from the allowable.

The Herd Creek Allotment would be allocated as present and the AMP would remain in effect.

Wild Horses - Wild horses allocated on the basis of their limited critical winter ranges and dietary overlap with livestock. All AUMs horses could use based upon the above were allocated to them.

Reduced Level of Grazing

Wildlife - Big game allocation was the same as in the proposed action.

Livestock - Allocation was made based upon BLM suitability criteria outlined in Washington Office Instruction Memorandum 78-134 (on file in the Idaho State and Salmon District Offices). In wild horse areas, the reduction in livestock use was based upon the percentage use by livestock and wild horses as presented in the proposed action.

Wild Horses - The range of horses to be managed for was 75 to 100 animals. Any number less than 75 wild horses would probably develop a situation of widely dispersed animals which would lead to breeding problems (horses finding pastures).

SUMMARY OF RANGE SUITABILITY CRITERIA USED IN DEVELOPING PROPOSED ACTION

The suitability criteria for cattle in the State Director's memo of June 5, 1978, was reviewed and the following areas are considered suitable for livestock grazing:

1. All areas with slopes 0-20 percent where the distance from water is less than four miles.
2. All areas with slopes between 21-30 percent where the distance from reliable water is 0.6 miles or less.
3. All areas with slopes between 31-40 percent where the distance form reliable water is 0.4 miles or less.
4. All areas with slopes between 41-50 percent where the distance from reliable water is 0.3 miles or less.
5. All areas with slopes between 0-50 percent where water can be developed from a known source either on or off-site and within the distance criteria in 1 through 4 above.
6. 40 percent of the forage on areas with slopes between 0-50 percent that have no known on-site water source but where water could be developed using present technology.

The above criteria allocates forage to cattle on the areas presently being used by them as indicated by the present range condition ratings for these areas.

APPENDIX 1-C

RATIONALE FOR MFP RECOMMENDATIONS

MFP 1 RECOMMENDATIONS	RATIONALE/CRITERIA
Grazing Systems Seasonal, rest rotation and deferred rotation grazing systems are proposed for the Challis Planning Unit (see Chapter 1 for a description of each system).	Grazing systems are proposed pursuant to BLM's responsibilities under the Taylor Grazing Act and the Federal Land Policy and Management Act of 1976. Since 88 percent of the forage in the Challis Planning Unit is in fair to poor condition, grazing systems have been selected to improve range conditions, i.e., raise the fair to poor condition classes at least one class in a 15-year period. All grazing systems were selected in accordance with the criteria established for grazing management systems defined in BLM Manual 4110.
Range Projects Range-facilitating projects are proposed to maintain the stocking level, develop grazing systems and increase forage production.	Range improvement projects are proposed to implement the proposed grazing systems. Fences are proposed to control livestock and insure better utilization of the forage. The proposed water developments will provide water in areas not presently available. Plowing and seeding areas with limited forage will substantially increase the available forage for grazing animals. Brush control projects are proposed to meet the forage objectives of the grazing systems.

MFP 2 RECOMMENDATIONS	RATIONALE/CRITERIA
Livestock Grazing Graze the proposed allotments at the following rate: 10,436 AUMs.	The Federal Land Policy and Management Act of 1976 (P.L. 94-579) requires that the public lands be managed in such a manner that forage and/or habitat is provided for livestock, fish and wildlife, and the watershed and other related resource values are protected. Accordingly, grazing has been allocated in the Challis Planning Unit by allotments after considering the needs of livestock, wildlife (deer, elk, antelope, and bighorn sheep), wild horses, watershed values and other resource considerations.

APPENDIX 1-C (Continued)

Continue the present grazing system on the Herd Creek Allotment and implement grazing systems on eight allotments; continue seasonal grazing on eight allotments; no grazing in the Malm Gulch Allotment.	The BLM is required to manage livestock grazing pursuant to the requirements of the Taylor Grazing Act and the Federal Land Policy and Management Act. Accordingly, the Herd Creek Allotment has been cooperatively developed and approved by personnel from the BLM, Challis National Forest, and the users. Implementing the proposed grazing systems (rest rotation and deferred rotation) on eight allotments will intensify range management. Seasonal grazing is proposed because present range condition and trends and economics do not support the concept of developing intensive management on these allotments.
Range Projects	
Develop range-facilitating projects to maintain the proposed stocking rate and increase forage production. a. 54.1 miles of fence. b. 51 spring developments. c. 44.5 miles of water pipeline. d. 31 water troughs along the pipelines. e. Plow and seed 1,310 acres. f. Initiate brush control on 21,075 acres.	The proposed range improvement projects are necessary to implement the proposed grazing systems.
Wild Horses	
Maintain 162 wild horses within the area traditionally used in 1971.	The BLM proposes to manage an optimum number of wild horses in the Challis Planning Unit to fulfill the requirements and intent of the Wild Horse and Burro Act of 1971. Public opinion favors this concept. The BLM proposes to maintain a wild horse herd between 100 and 202 animals. The herd will be reduced every fourth year to maintain an optimum herd. Forage has been allocated to maintain on the average (four-year period) 162 horses per annum.
Wildlife	
Allocate forage for big game wildlife species.	The Federal Land Policy and Management Act of 1976 (P.L. 94-579) directs that public lands be managed in a manner ... that will provide food and habitat for fish and wildlife ... Therefore, forage has been allocated for big game animals to satisfy the Idaho Fish and Game Department's projections, except when forage was not available in established use areas.

APPENDIX 1-C (Continued)

Exclude livestock and wild horse grazing on 2,291 acres of critical elk winter habitat and 5,790 acres of critical bighorn sheep habitat.	Critical areas for elk and bighorn sheep occupy a portion of the Challis Planning Unit. These areas are essential for the survival of the species. Grazing competition in these areas would adversely affect the survival of elk and bighorn sheep. Consequently, livestock and wild horse grazing will be excluded to protect these critical environmental areas as required by the Federal Land Policy and Management Act.
Fence 3.25 miles (both sides) of important anadromous fish streams.	Riparian habitat degraded by livestock concentration must be improved to satisfy BLM responsibility under Section 102 of the Federal Land Policy and Management Act of 1976. Accordingly, experimental fencing will be constructed on Herd and Lake Creek to protect the riparian habitat of anadromous fish. After two grazing cycles, the effectiveness of this experiment will be determined.
Watershed	
Do not graze more than 50 percent of the current year's production of forage used by grazing ungulates.	The Federal Land Policy and Management Act requires that public lands are managed in a manner that will protect the water resource. Accordingly, forage has been reserved to protect watershed values.
Discontinue livestock and wild horse grazing on 13,041 acres of critical watershed.	Pursuant to responsibilities under the Federal Land Policy and Management Act, the BLM must protect critical watersheds. Livestock and wild horse grazing is proposed to be terminated in critical watershed areas to protect the resource.
Lands	
1,110 acres of public land is proposed for future urban/suburban, industrial development and agricultural use.	Suitable land for residential/commercial expansion and agricultural development is scarce. Public lands identified in the planning process as suitable for disposal according to criteria established in Section 203 of the Federal Land Policy and Management Act has been allocated for possible disposal to satisfy community needs. Only minor impacts on other resources and positive socio-economic benefits on the local communities would result.
Protect cultural resources.	Section 106 of the National Historic Preservation Act of 1966 (P.L. 89-665), Section 2(b) of Executive Order 11593, Section 101(b)(4) of the National Environmental Policy Act of 1969 (P.L. 91-190), and the Federal Land Policy and Management Act of 1976 (P.L. 94-579) require protection of significant historic, cultural and paleontological resource values. Proper protection will ensure that scientific values are not lost.

APPENDIX 2-A

METHODOLOGY FOR THE CHALLIS UNIT VEGETATION INVENTORY AND FORAGE ALLOCATION

Vegetation Inventory

An ecological site and condition inventory was conducted in the summer of 1977 in the Challis Unit of the Salmon District of the Bureau of Land Management. The inventory was conducted following the guidelines set forth in the SCS National Range Handbook (1976).

A third order soil survey was completed in 1977 by the SCS on a contract basis. Soils were classified to the series and phase of series level. They were mapped as associations, consociations, and complexes.

The potential natural plant communities were identified and correlated with the soil survey. The production and species composition of the potential natural plant communities was determined by sampling and studying reference sites in the Challis Unit and by comparing them with samples taken in the Little Lost-Birch Creek area the same year on the same ecological sites and with existing SCS range site descriptions. Available literature, research, and personal knowledge of other specialists were reviewed. The ecological site descriptions are approximations of site potential based on the best available knowledge at the time of their writing.

Ecological condition was determined by comparing the present plant community and site conditions with that described for potential.

The vegetation production and species composition inventory consisted of two parts. First, 160 areas were sampled using the 10-plot double sampling technique. These samples were distributed throughout the Challis Planning Unit in an attempt to sample all of the major ecological sites and their various condition classes. These samples provided the quantitative base to begin the characterizations of the production on each site and species componsition. They also provided the necessary training to the sampling crews to be able to make acceptable estimates of production and species composition to determine ecological condition.

Approximately 1,700 of these condition write-ups were completed, averaging about one per 200 acres.

Compilation of the inventory data involved portraying on maps the soil survey, ecological sites, and ecological condition class. Current vegetation types were identified within the condition classes from the plant data vegetation samples and condition write-ups.

Acreages were tabulated for the various ecological sites, condition class, and current vegetation types within a condition class (called strata). The average sample year production for each strata (a site, condition class, and current vegetation type) was multiplied times the acreage for the strata to get the total production for the sample year. This was compiled by allotment.

Forage Allocation

To make a more equitable apportionment of forage between the different grazing animals, it is deemed desirable to separate the allowable use factors into two components: (1) the plant's biological limit, and (2) animal preference or dietary requirement. The biological limit is the degree expressed in percent that a plant can be grazed or have its foliage removed without affecting its viability and capability to reproduce.

A biological limit factor is applied to each plant class. The biological limit factors are used to determine the total pounds of herbage that can be removed by a grazing animal. The herbage that can be removed by grazing animals (herbivores) is called forage. The amount of forage is determined for each type of plant (grass, forb, and shrub). Plants not normally grazed, except under extremely heavy use, are not included in this total.

The biological limit[1/] (percent) for each forage class (grasses, forbs, and shrubs) by season is as follows:

	Spring	Summer	Fall	Winter	Yearlong
Grasses	30	40	50	50	30
Forbs	25	25	25	25	25
Shrubs	30	30	30	30	30

A biological limit of 30% in the spring was used for grasses as these plants during this period have actually produced only a portion of their total production. Production figures reflect total production; therefore, the biological limit must be lower in the spring.

Biological limits for yearlong grazing was determined to be the same as in the spring as animals grazing yearlong cannot be controlled within a seasonal use area and grazing occurs as soon as plants begin to green up. Grazing at this time can cause a reduction in grass production. Grazing also occurs when most forbs and some grasses are covered with snow and are unavailable for use.

Where grazing use occurred in more than one season, a weighted biological limit was calculated based on seasonal use. Seasonal use determinations are based on the phenological development of the major grass species since grasses are the principal forage producers for most large herbivores in the Challis Planning Unit. Weighted biological limits were determined by multiplying the seasonal biological limit by the seasonal use percent. The figures are then summed to give the weighted biological limit.

Diet preferences[2/] are also weighted where grazing occurs in more than one season or as in the case of horses yearlong. This was accomplished by multiplying the seasonal use percent by the seasonal percent diet of grasses, forbs, and shrubs, respectively. This gives a weight seasonal diet preference by each plant class. These figures were then summed to give the weighted yearlong diet preference. Dietary preferences are shown below:

	Spring			Summer			Fall & Winter			Yearlong		
	Grass	Forb	Shrub	Grass	Forb	Shrub	Grass	Forb	Shrub	Grass	Forb	Shrub
Cattle	90	3	7	90	3	7	86	0	14			
Horses										78	14	8
Deer	43	7	47				12	5	83			
Antelope	25	25	50	5	40	55	5	5	90			
Elk	51	43	5				50	34	16			
Bighorn Sheep	3	3	94				84	9	7			

The next step determines the pounds of forage on the allotment. The total annual production of plants that are palatable to the particular class of herbivore concerned (i.e., livestock, wild horses, antelope, deer, elk, bighorn sheep) was totaled. This production figure was multiplied by the weighted yearlong biological limit of the respective forage class (i.e., grasses, forbs, and shrubs). This gives the pounds of available forage which can be used without affecting the viability of the plant for that animal.

The amount of forage required to support a grazing animal for one month by class of plant was determined by multiplying the diet preference percent by the total pounds of forage required to support an animal for one month.

The amount of forage required to support an animal for one month, by plant class, is divided into the total pounds of forage produced by plant class to determine the number of AUMs available for that particular grazing animal. The plant class which produces the least number of AUMs for that animal is then the factor limiting the number of animals that can be grazed on that allotment. This number is also the maximum number of that class of animal that can be grazed on that allotment.

When more than one animal class grazes the same allotment or area, the pounds of forage by plant class is determined for the animal given preference, and this is subtracted from the total. This gives the pounds of forage available for the remaining animals by plant class.

The pounds of forage required to support various animals for one month is as follows:

Animal	Forage Required lbs/AUM
Cattle	800
Horses	1,000
Sheep	200
Deer	200
Elk	667
Antelope	160
Bighorn Sheep	154

FOOTNOTES

1/ Data for biological limits was obtained from personal knowledge of personnel of the Bureau of Land Management; from proper use tables in the district files; from BLM, SCS, and U.S. Forest Service Manuals; and from the following:

a. Hedrick, D. W. Proper Utilization - A Problem in Evaluating the Physiological Response of Plants to Grazing Use: A Review. Oregon Agricultural Experimental Station Miscellaneous Paper No. 46, pp. 34-43.

b. Laycock, W. A. 1967. How Heavy Grazing and Protection Affect Sagebrush-Grass Ranges, Journal of Range Management, Vol. 20(4): 206-213.

2/ Animal diet preferences were obtained from many different sources. Some of these are as follows:

a. Goodwin, G. A. 1975. Seasonal Food Habits of Mule Deer in Southeastern Wyoming. USDA Forest Service Research Note. Laramie, Wyoming. No. RM-287.

b. Hansen, R. M., and L. D. Reid. 1975. Diet Overlap of Deer, Elk, and Cattle in Southern Colorado. Journal of Range Management, 28(1):43-47.

c. Hubbard, R. E., and R. M. Hansen. 1976. Diets of Wild Horses, Cattle, and Mule Deer in the Pice Basin, Colorado. Journal of Range Management, 29(5):389-392.

d. Hurd, R. M., and F. W. Pond. 1958. Relative Preference and Productivity of Species on Summer Cattle Ranges, Big Horn Mountains, Wyoming. Journal of Range Management, 11(3):109-114.

e. Julander, O'Dell. Techniques in Studying Competition Between Big Game and Livestock. Intermountain Forest and Range Experiment Station. USDA Forest Service, Ogden, Utah. 18-21.

f. Kufeld, Roland. 1973. Food Eaten by the Rocky Mountain Elk. Journal of Range Management, 26(2):106-112.

g. Rosiere, R. E., J. D. Wallace, and R. F. Beck. 1975. Cattle Diets on Semidesert Grassland: Nutritive Content. Journal of Range Management, 28(2):94-96.

h. Smith, Arthur D. Consumption of Native Forage Species by Captive Mule Deer During Summer. This article was published while Mr. Smith was Associate Professor, Utah State Agriculture College, and Associate Project Leader, Federal Aid, Utah State Fish and Game Commission, Logan, Utah.

i. Challis Wild Horse Management Plan, 1976. USDI. Bureau of Land Management, Salmon, Idaho.

j. Annual Average Percentage of Major Plants in the Diets of Large Ungulates, Red Desert, Wyoming. 1974-75 & 77. Unpublished data from Rawlins District, Bureau of Land Management, Rawlins, Wyoming.

APPENDIX 2-B

CLIMATE AND 1977 HERBAGE PRODUCTION IN THE CHALLIS INVENTORY AREA

Introduction

Climate and 1977 production was evaluated to determine approximately what an average herbage production level would be for the various ecological sites in the Challis area.

Herbage yield and species composition of plant communities exhibit considerable fluctuation and variation from year to year because of varying weather conditions. To properly evaluate the productive potential of specific areas, it is necessary to differentiate between vegetative differences which are the product of inherent site differences and those which are more properly associated with variables in weather conditions during the year that herbage evaluations are made.

Literature Review

Several studies have been made showing close relationships between climate and range herbage production. Blaisdell (1958) found some very significant correlations of precipitation and temperature to herbage phasic development (phenological stage), height growth, and weight production near Dubois, Idaho.

Temperature was found to have the strongest effect on start of growth and phasic development, while precipitation was the dominant climatic factor correlated with herbage production. However, precipitation was more closely correlated with total production, or groups by life form class than with individual species. This would indicate that the community and not the individual plant species was in equilibrium with moisture supply.

He found that the precipitation prior to the growing season (July through March), had a greater influence on herbage weight than precipitation during the growing season (April, May and June). The chief effect of the pre-growing season precipitation was the assurance of soil moisture during the period of active plant growth (April, May and June). June precipitation was not found effective in increasing herbage production. High herbage weights were best correlated with high July through March precipitation and with cooler April through May temperatures. The converse was found to occur also. Several authors cited in Blaisdell's study indicated that above normal temperatures accelerated phasic development of plants.

Early or rapid phasic development did not necessarily mean early attainment of high weight yields, rather the opposite. The early or rapid phasic development was associted with the warmer, drier April, May or June period, which was also the conditions for the lower production years. Some relationships between herbage weight and stage of development were found however.

Bluebunch wheatgrass averaged 66% of its herbage weight and 83% of its height growth when flower stalks first appeared (just coming out of boot stage). When the heads were fully out, 90% of its herbage weight and 97% of its height growth were achieved. At full bloom 97% of weight production and 100% of height growth were achieved. Attainment of particular percentage level of weight production was approximately 10-12 days behind the same percentage level of height growth.

Blaisdell stated that since plant production seemed chiefly dependent upon the number of shoots, conditions during the period of shoot initiation should be more related to production than condition during the growing season.

Sharp (1970) found that the amount and distribution of April, May and June precipitation largely determines the annual forage production. Soil and air temperature were considered important during the period of favorable soil moisture. Between 70 and 80 percent of the year to year variation in production was attributed to the April, May and June precipitation.

Sneva and Hyder (1962) developed formulas to predict herbage yield based on "crop year" precipitation rather than calendar year precipitation. Since July and August precipitation is normally low and has little effect on herbage production, they chose September through June as the "crop year" precipitation period.

Since all the variables of weather are interrelated in their effect on herbage growth and production, it would seem that neither precipitation nor temperature alone will always be a reliable index to herbage production on a given soil. Lull and Reinhart (1955) found that soil moisture availability is a more accurate index to the effectiveness of precipitation than the precipitation record itself.

Other authors have used calculated actual and potential evapotranspiration for estimating potential plant growth. Arkley and Ulrich (1962) developed a simplified method for calculating actual evapotranspiration and the water balance of the soil as a means of predicting plant growth potential. Potential evapotranspiration can be readily calculated from monthly mean temperatures by means of tables and nomograms now available in the literature. Actual evapotranspiration is calculated from potential evapotranspiration by taking precipitation and the water holding capacity of the soil into account. Actual evapotranspiration is used in Arkley's and Ulrich's paper in the same sense as by Thornwaite (1958). It refers to a calculated value and does not imply any real measurement. The principle is to evaluate the limitation on plant growth due to either temperature or moisture.

This procedure assumes that no runoff or deep percolation beyond the depth of rooting occurs until the entire root zone is filled (water-holding capacity). Apparent water losses from these and other sources or water added from other sources (run-in, etc.) should be added or subtracted from precipitaiton before calculating the water balance.

Hugie Passey (1959) made an assessment of the relationship of calculated actual evapotranspiration and production on several sites in Idaho and found some close relationships. These relationships were approximations but showed considerable promise as a means of evaluating certain vegetative responses to weather variables.

Rosenzweig (1968) used evapotranspiration or water budget criteria to predict annual above ground productivity in plant communities ranging from deserts to tropical forests. He found evapotranspiration to be a highly reliable predictor. He suggested that the high correlation of evapotranspiration and productivity is due to the fact that this measures the simultaneous availability of water and solar energy, the most important rate-limiting resources in photosynthesis.

Discussion

The 1976-77 precipitation year for the Challis area was unusual. It was an extremely dry winter and early spring followed by average to above average precipitation in late spring and early summer. This compounded the problem of the normal variability encountered when relating herbage production to climate.

1977 herbage production was primarily a result of precipitation during the growing season, rather than available moisture as a result of winter precipitation. This is evident when precipitation records for area weather stations are analyzed for the winter period October 1976 to March 1977. Precipitation ranged from a low of 20% of normal to a high of 43% of normal. The average during this period was 28% of normal.

The Challis, May, Mackey Ranger Station, Salmon, and Chilly Barton Flat weather stations were used for climate analysis. All stations appear to relate well to the Challis inventory area. The Sun Valley station was initially considered but did not appear to relate well to the inventory area. Sun Valley is primarily a winter precipitation area whereas precipitation is really equally divided between the growing season and winter at the other stations. All of the above stations are within 65 miles of the Challis inventory area.

Actual evapotranspiration, (ETa) comparisons for 1977 with long-term average were made for these weather stations using the procedure as described by Arkley and Alrich (1962). Table 1 summarizes these comparisons.

It is recognized that this approach is limited by the lack of several years production data and more accurate weather data for each specific ecological site. However, some reasonable analysis was needed to assess 1977 herbage production levels. ETa calculations made for the appropriate time periods of "crop year" and parts of the crop year rather than calendar year appeared to be as realistic as any that are available. Picking the appropriate crop year or part of crop year precipitation to reflect growth potential for 1977 or any year is important. No adjustments were made for runoff, deep percolation, or evaporation losses. The losses to these factors were assumed to be consistant from 1977 to long-term average for purposes of these calculations.

The following ETa analysis was made: Apparent soil moisture going into the growing season (April 1) was 15-45% of normal, with the Challis station at 15% of normal and Chilly Barton Flat at 16% of normal. This is a direct result of the dry, open winter of 1976-77. The average of the five stations was 25% of normal. April, May, and June ETa analysis was likely the most indicative for 1977 herbage production. The ETa values ranged form 60-90% of normal for the five weather stations with an average of 78% and median of 76% of normal.

The ETa values for July are well above average. However, it is doubtful if the precipitation during that period would have added much weight growth, but instead may have extended the green period and quality of the herbage.

Most of the grasses were at seed ripe from 7/15 to 8/1 (Challis phenlolgy data). They were in the boot stage from 5/15 to 6/1. Full bloom would have been prior to July 1. Previous studies (Blaisdell 1958) have shown that 90-97% of herbage weight was achieved by bluebunch wheatgrass at full bloom. It is likely that other grasses respond similarly.

For herbage production to be increased as a result of the July precipitation and indicated ETa, new shoot initiation would have to develop and moisture remain sufficient to extend their growth. Shoot initiation on native cool season plants is best in cool-moist conditions. The high tempertures of July would have limited this somewhat.

Another factor for this rationale comes from the sampling data taken. Sampling began approximately June 20, 1977 and continued through August 30, 1977. Approximately 30 rechecks were made in late July and early August to see if corrections were needed to adjust earlier samples for increased growth. No corrections were needed.

The October 1976 through June 1977 ETa values range from 56% normal to 89% of normal with an average of 77% and a median of 73% of normal. These values compare very well with the April, May, and June period.

The ETa values both for the growing season (April, May and June) and the "crop year" October 1976 - June 1977 indicate potential for plant growth could have been from approximately 60% to 90% of normal. Some other considerations were important in the climate and production analysis.

Low soil moisture going into the growing season may diminish the effectiveness of the moisture that comes from plant growth. It may move through the soil profile faster and be more subject to evaporation losses.

An open winter leaves plant crowns exposed to temperature extremes, which combined with the low soil moisture may have damaged existing buds thus reducing growth potential when growth did start.

In April 1977 plants were in drought stress and air temperatures were above average (110-115% of normal). This would not have been conducive to good shoot initiation and tillering plants. Plants went into May with very little growth. May moisture was sufficient to start or add plant growth. ETa for May was 72% - 113% of normal with an average of 82% of normal. May temperatures were slightly below average (91-98% of normal).

June ETa was 82% - 116% of normal with an average value of 93% of normal. June temperatures were 110% of normal. Indicated growing conditions for June were approximately average but plants coming out of drought stress, had a lack of tillering and were probably going through rapid phasic development.

This climate and production analysis for 1977 in the Challis inventory area is approximate. Using existing data in a very short time period the best professional judgment is that plant growth potential could have been from 60-90% of normal. Average and median values for this range are 78% and 76% for April-June and 77% and 73% for October-June respectively.

A management decision was made to adjust 1977 sample year production upwards 25% to approximate average herbage production levels. It was also decided to make initial stocking rate estimates based on approximate average herbage production.

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APPENDIX 2-B

CHALLIS ES AREA - CALCULATED ACTUAL EVAPOTRANSPIRATION DATA FOR THE PERIOD OCTOBER, 1976 - SEPTEMBER, 1977

Weather Station	% of Normal Soil Moisture 4/1 [1]	Percent of Normal										% of Normal PPT 10/76-3/30/77
		ETa [2] Oct-Sep	ETa Oct-June	ETa Apr-June	ETa April	ETa May	ETa June	ETa July	April Temporary	May Temporary	June Temporary	
Challis	15	85	56	62	36	72	82	267	110	92	109	20
May	41	107	75	78	63	76	93	416	110	93	111	35
Mackay R.S.	24	99	86	90	66	76	116	233	113	93	110	23
Salmon	31	122	89	90	63	113	83	352	110	98	110	43
Chilly Barton Flat *(data incomplete Nov. & June)	16	95	79	68*	42	77	*	232	114	91	*	20

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[1] Calculated from available soil water holding capacity and precipitation. No allowance made for water lost to evaporation or runoff.

[2] ETa = Actual Evapotranspiration (calculated).

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APPENDIX 2-C

UNITED STATES GOVERNMENT

Memorandum

4410(930)

TO : District Manager, Salmon District

DATE: June 5, 1978

FROM : State Director

SUBJECT: Range Suitability Criteria for Challis Unit

It has long been recognized that livestock grazing in not made on a uniform basis over a range area. Degree of slope, distance to water, and the combined effect of these two factors influence grazing patterns. Location of salt, riding, season of use, and type of grazing system can be employed to obtain a more uniform use. On very steep ranges, there remain some areas which must not be included in computations as available. Such areas are considered as unsuitable. The following criteria which deviates from Washington guidance will be used for determining suitable range areas for maximizing livestock use.

1. All areas with slopes of 0 to 20 percent.
2. Areas with slopes 0 to 50 percent where water is not now available but can be developed from known sources.
3. Forty percent of the forage on slopes 20 to 50 percent where water developments have not yet been identified.
4. Twenty percent of the forage on slopes over 50 percent.

Areas where the forage produced is not suitable for livestock use are:

1. Low producing areas without water.
2. Areas of fragile land.

Rationale for using this criteria is as follows:

(1) Seasonal intermittent water is available in draws in most allotments. This water is available to the livestock in the spring prior to June 21 when most allotments are being used.

(2) The regular reoccurring movement patterns of livestock twice each year from the ranch to summer range in the spring and from summer range to ranch in the fall through BLM allotments with extreme variation in elevation and topography in the Challis Unit causes the livestock to use slopes that may not be grazed in other areas.

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(3) The desire of animals familiar with this area to get to summer range in the spring and to return to the ranches in the fall causes them to travel and graze slopes that they would not otherwise negotiate. Cattle unfamiliar with the area which have not experienced this movement pattern tend to stay in the flatter areas.

(4) Because of annual reoccurring livestock movement patterns, and with salting and a requirement for riding to move livestock, there are permanent waters available in areas of over 50 percent slope where livestock can be required to use 20 percent of the available vegetative production from slopes exceeding 50 percent slope.

The following criteria should be used when maximizing wild horse use:

1. All forage on slopes 0 to 50 percent with or without water.

2. Twenty percent of the forage on slopes over 50 percent.

Rationale for this criteria is as follows:

(1) In areas 0 to 50 percent slope, the distance from water is not a limiting criteria for wild horses in the Challis Wild Horse range area because horses regularly travel 8 miles or more to water daily, and there are no areas in the Challis Wild Horse Area that exceed four miles from water.

(2) Wild horses do use slopes steeper than 50 percent during the year because of closeness to water on contour of steeper slopes, their desire to maintain a vantage location, and their need to get away from nuisances such as people, livestock, and pests.

Wm. L.

APPENDIX 2-D

METHODOLOGY FOR DETERMINING PREDICTED CHANGES IN RANGE CONDITION, PRODUCTION, AND TREND

The predicted changes in range condition that would occur in 15 years were based upon several assumptions. The most important assumption is that under the proposed action, range condition would improve one condition class on currently suitable range where grazing systems are proposed. This is consistent with studies by Douglas (1915), Johnson (1965), and McLean and Tisdale (1972). These studies would be applicable to the higher precipitation areas in the Challis unit. Also, the assumption was made that areas that are currently potentially suitable or unsuitable would remain in the same condition as the present situation. The reason for this is that these areas receive such minimal use now that the reduction in large ungulate numbers will not appreciably affect these areas.

Similar assumptions were made for allotments with seasonal grazing management proposed. It was estimated that the reduced grazing by livestock and wild horses would result in the same type of improvement as under a grazing system.

In conclusion, the following changes would occur if the proposed action is implemented:

1. All suitable range would rise one class in condition.

2. All areas which are unsuitable or potentially suitable would remain in the same condition they are in now. This includes areas that lack water, whether or not these areas would become suitable through water development, low producing areas (areas in poor condition which receive less than 13 inches of effective precipitation), areas of greater than 50 percent slope, and areas of highly erosive soils.

Predicted production of forage was based upon the potential of a site to produce vegetation. The range of production in each condition class varies and is greater in the higher condition classes. This production was verified in the field by vegetation clipping samples.

To predict the changes in trend that would occur under the proposed action, all changes in condition were tabulated. All acreages which raised in condition were listed in upward trend. All other acreages were listed in static trend.

The 15 year predictions for the other alternatives were based on the predictions under the proposed action. They were adjusted on the assumption that the changes from the proposed action's predictions would be inversely proportional to the relative level of grazing, i.e., if the level of grazing was 1.5 times heavier under an alternative than under the proposed action, the forage production on the suitable area would be 1/1.5 or 67 percent of that on the suitable area under the proposed action. Occasionally this method had to be altered slightly based on experience and judgement (if it came up with unrealistic figures).

APPENDIX 3

The 291 terrestrial wildlife species (72 mammals, 204 birds, 15 amphibians and reptiles) can be placed into like groups dependent on the life requirements of reproduction and feeding requirements. The groups will be referred to for ease of consolidating impacts to wildlife species. Possible life forms are as follows:

LIFE FORMS

No. Reproduces

1. In water.
2. On ground around water or on floating or emergent vegetation.
3. In cliffs, caves, rims, and/or tallus.
4. On ground without specific water, cliff rim or tallus association.
5. In bushes.
6. Primarily in deciduous trees.
7. Primarily in conifers.
8. In trees, non-specific.
9. Excavates own hole in a tree.
10. In a hole made by another species or naturally occurring.
11. Underground burrow.

Feeds

A. In water.

B. On ground, in bushes, and/or trees.

C. In water, on ground, in bushes and trees.

D. On ground or in air.

E. On ground.

F. In bushes, trees, or air.

G. On ground, in water or air.

H. On ground, in bushes, trees or air.

I. On ground or in water.

J. On or under ground.

APPENDIX 3-A

REPTILES AND AMPHIBIANS OF THE CHALLIS ES AREA

Species			Life Form				Habitat Occurrence													
Common Name	Scientific Name	Alpha Code	Repro-duces	Feeds	Relative Abundance	Classification	Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	Impacts resulting from disturbance of vegetation and/or presence of livestock
Spotted Frog	Rana pretiosa	Rapr	1	I	C	UP												X 0	0	IF, C1, C3, C4
Leopard Frog	Rana pipiens	Rapi	1	A	C	UP												X 0	0	IF, C1, C3, C4
Western Toad	Bufo boreas	Bubo	1	I	U	UP												X 0	0	IF, C1, C3, C4
Woodhouse's Toad	Bufo woodhousei	Buwo	1	E	U	UP								0				X 0	0	IF, C1, C3, C4
Northern Long-toed Salamander	Ambystoma macrodactylum	Amma	1	E	U	UP	0	0	0	0	0	0						X 0	0	C1, C4
Blotched Tiger Salamaoder	Ambystoma tigrinum	Amti	1	E	U	UP								X				X 0	0	C1, C4
Sagebrush Lizard	Sceloporus graciosos	Scgr	4	E	C	UP	X 0	X 0	X 0	X 0	X 0	X 0	X 0	X 0	X 0	X 0	X 0		X 0	IF, C1, C3, C4
Shorthorned Lizard	Phrynosoma douglassi	Phdo	4	E	C	UP	X 0	X 0	X 0	X 0	X 0	X 0	X 0	X 0	X 0	X 0	X 0		X 0	IF, C1, C3, C4
Western Skink	Eumeces skiltonianus	Fusk	4	E	U	UP	X 0	X 0	X 0	X 0	X 0	X 0		X 0				X 0	X 0	IF, C1, C3, C4
Rubber Boa	Charina bottae	Chbo	4	E	U	UP							X 0	X 0				X 0	X 0	IF, C1, C3, C4
Gopher Snake	Pituophis melanoleucus	Pime	4	E	C	UP							X 0	X 0				X 0	X 0	IF, C1, C3, C4

APPENDIX 3-A

REPTILES AND AMPHIBIANS OF THE CHALLIS ES AREA

Species 1/			Life Form 2/				Habitat Occurrence 5/													
Common Name	Scientific Name	Alpha Code	Reproduces	Feeds	Relative Abundance 3/	Classification 4/	Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Western Garter	Thamnophis elegans	Thel	2	I	C	UP								X O				X O	X O	IF, C1, C3, C4
Common Garter	Thamnophis sirtalis	Thsi	2	I	C	UP								X O				X O	X O	IF, C1, C3, C4
Western Rattlesnake	Crotalis viridis	Crvi	3	E	C	UP	X O	X O	X O	X O	X O	X O			X O	X O	X O	X O	X O	IF, C1, C3, C4
Smooth Green Snake	Opheodrya vernalis	Opve	2	E	R	UP												X O	X O	IF, C1, C3, C4

1/ Bernard, Stephen R. and Kenneth F. Brolon 1977. Distribution of Mammals, Reptiles, and Amphibians by BLM Physiographic Regions and A. W. Kuchler's Associations for the Eleven Western States. Tech. Note 301. US Department of the Interior, Bureau of Land Management.

2/ Refer to Appendix for Life Form descriptions.

3/ A = Abundant - Observed everytime a person visits its habitat at the proper season.
C = Common - Observed most of the time a person visits habitat at the appropriate season.
U = Uncommon - Not observed regularly in its habitat. Habitat may be limited.
R = Rare - Rarely observed. Species occupies a small percentage of its preferred habitat or habitat is extremely limited.

4/ G = Game Animal
F = Fur Bearer
P = Predatory Animal
GB = Game Bird
g = Protected Non-game
UP = Unprotected
S = Sensitive Species

5/ X = Reproduction
O = Feeding

6/ DF = Direct Food Competition
IF = Indirect Food Competition
W = Competition for Water
B = Competition Creates Behavorial Impacts
C = Competition for Cover
C1 = Resting Cover
C2 = Nesting Cover
C3 = Thermal Cover
C4 = Escape Cover

APPENDIX 3-B

BIRDS OF THE CHALLIS ES AREA

SPECIES 1/		ALPHA CODE 1/	LIFE FORM 2/		RELATIVE ABUNDANCE 3/	CLASSIFICATION 4/	SEASON OF OCCURRENCE 5/	NESTING HABITS 6/						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRODUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Common Loon	Gavia immer	Gaim	2	A	R		M			C2,C3,C4						Fish	
Eared Grebe	Podiceps caspicus	Poca	2	A	R		M			C2,C3,				Aquatic		Aquatic Animals	
Horned Grebe	Podiceps auritus	Poau	2	A	U		M			C2,C3				Aquatic		Aquatic Animals	
Western Grebe	Aechmophorus occidentalis	Aeoc	2	A	R		M			C2,C3				Aquatic		Aquatic Animals	
Pied-billed Grebe	Podilymbus podiceps	Popo	2	A	R		S			C2,C3				Aquatic		Aquatic Animals	
Great Blue Heron	Ardea herodias	Arhe	3	A	C		S				C2 cottonwood					Fish	
Blackcrowned Night Heron	Nycticorax nycticorax	Nyny	8	I	R		S				C2	C2				Fish, Amphib. Reptiles, Mice	
Snowy Egret	Lucophoyx thula	Lutb	2	I	R		S					C2		X		Fish, Amphib. mice, reptiles mollusks	
American Bittern	Botaurus lentiginosus	Bole	2	C	U		M			C2,C3,C4				X			
• Wood Ibis	Mycteria americana	Myam	2	I	R		S			C2				X			
Whistling Swan	Olor columbianus	Olco	2	1	R		M			C2				X			X
Canada Goose	Branta canadensis	Brca	2	I	C	GB	YL	C2		C2	C2			X			X
White-fronted Goose	Anser albifrons	Anal	2	I	R	GB	M							X			X
Snow Goose	Chen hyperborea	Chhy	2	I	U	GB	M							X			X Aquatic
Mallard	Anas platyrhynchos	Anpl	2	A	A	GB	YL	C2		C2				Aquatic			X Aquatic
Gadwall	Anas strepera	Anst	4	A	R	GB	M-S	C2		C2				Aquatic			Aquatic
Pintail	Anas acuta	Anac	2	I	U	GB	M-S	C2		C2							X
Green-winged Teal	Anas carolinensis	Anca	2	A	U	GB	YL	C2						Aquatic			Aquatic

APPENDIX 3-B (Continued)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSIFICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRODUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Blue-winged Teal	Anas discors	Andi	2	A	U	GB	M-S	C2		C2				Aquatic			Aquatic
Cinnamon Teal	Anas cyanoptera	Ancy	2	A	U	GB	M-S	C2		C2				Aquatic			Aquatic
American Widgeon	Mareca americana	Maam	2	I	U	GB	YL	C2		C2				Aquatic			X
Shoveler	Spatula clypeata	Spcl	2	A	U	GB	M-S			C2				X			Aquatic
Wood Duck	Aix sponsa	Aisp	10	I	R	GB	M				C2 cavity boxes			X			Aquatic
Redhead	Aythya americana	Ayam	2	A	U		M-S			C2				Aquatic			Aquatic
Rin necked Duck	Aythya collaris	Ayco	2	I	U		M-S	C2		C2				Aquatic			Aquatic
Canvasback	Aythya valisineria	Ayva	2	A	U		M-W			C2				Aquatic			Aquatic
Lesser Scaup	Aythya affinis	Ayaf	2	A	U		M-S	C2		C2				Aquatic			Aquatic
Common Goldeneye	Bucephala clangula	Bucl	8	A	C		M-W	C2			C2 cavity					Aquatic Animals	
Barrow's Goldeneye	Bucephala islandica	Buis	8	I	R		YL				C2 cavity					Aquatic Animals	
Buffle Head	Bucephala albeola	Bual	8	A	R		M-W	C2			C2 cavity					Aquatic Animals	Aquatic X
Ruddy Duck	Oxyura jamaicensis	Oxja	2	A	U		M-S			C2							Aquatic X
Nooded Merganser	Lophodytes cucullatus	Locu	10	A	R		M-W				C2 cavity					Fish	
Common Merganser	Mergus merganser	Meme	4	A	U		M-W				C2 cavity					Fish	
Turkey Vulture	Cathartes aura	Caau	4	E	R		M-S	C1,C2	C1,C2		C1,C2,C3 stumps					Carron	
Goshawk	Accipiter gentilis	Acge	7	B	R		YL				C1,C2,C3 conifer	C2 riparian				X	
Sharpshinned Hawk	Accipiter striatus	Acst	7	N	R		M-S				C1,C2,C3 old crow & hawk nests	C2 riparian				X	

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPNA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSI-FICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRO-DUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Cooper's Hawk	Accipiter cooperii	Acco	8	N	R		M-S				C1,C2,C3 conifers					X	
Red Tailed Hawk	Butea jamaicensis	Buja	3	E	U		YL		C1,C2,C3		C1,C2,C					X	
Swainson's Hawk	Buteo swainsoni	Busw	2	E	R		M-S					C2 ri-parian				X	
Rough-legged Hawk	Buteo lagopus	Bula	3	E	U		M-W									X	
Golden Eagle	Aquilia chrysaetos	Aqch	3	E	U		YL		C1,C2		C1,C2,C					X	
Bald Eagle	Haliaeetus leucocephalus	Hale	8	I	U	E/P	M-W				C1,C2					Fish Carrion	
Marsh Hawk	Circus cyaneus	Cicy	4	E	U		YL	C2		C2						X	
Osprey	Pandion haliaetus	Paha	8	A	R	S	M-S	C2			C1,C2					Fish	
Peregrine Falcon	Falco peregrinus	Fape	3	D	R	E/P	M-S		C2							X Birds	
Prairie Falcon	Falco mexicanus	Fame	3	D	R		M-S		C2							X	
Pigeon Hawk	Falcu columbarius	Faco	8	D	R	S	M-S									X Birds	
American Kestrel	Faleo sparvenrius	Fasp	10	E	C		M-S		C2		C1,C2,C			X		X	
Blue Grouse	Dendragapus obscurus	Deob	4	E	C	GB	YL	C2				C3,C4		X	X		X
Spruce Grouse	Canachites canadensis	Caca	4	E	R	GB	YL	C2			C3,C4	C4		X	X		X
Ruffed Grouse	Bonasa umbellus	Boum	4	E	U	GB	YL	C2				C3,C4		X	X		X
Sage Grouse	Centrocercus urophasianus	Ceur	4	E	C	GB	YL	C2				C3,C4		X	X		X
Ring-necked Pheasant	Phasianus colchicus	Phco	4	E	C	GB	YL	C2		C3,C4		C3,C4		X	X		X
Chukar	Alectoris graeca	Algr	4	E	C	GB	YL	C2		C3,C4		C3,C4		X	X		X

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSIFICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRODUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Hungarian Partridge	Perdix perdix	Pepe	4	E	U	GB	YL	C2						X	X		X
Sandhill Crane	Grus canadensis	Grca	2	I	R		M-S			C2				X		X Mice, Fish Amph. reptile	Grain
Virginia Rail	Rallus limicola	Rali	2	I	R		M-S			C2				X		Aquatic Animals	
Sora Rail	Porzana carolina	Poca	2	I	R		M-S			C2				X		Aquatic Animals	
American Coot	Fulica americana	Fuam	2	A	C		M-S			C2				X			X
Killdeer	Charadrius vociferus	Clvo	4	E	C		M-S	C2					Shoreline Swamps	X			
Common Snipe	Capella gallinago	Caga	4	I	C		M-S	C2					"	X			
Long-billed Curlew	Numenius americanus	Nuam	4	I	R	S	M-S	C2					"	X			
Solitary Sandpiper	Tringa solitaria	Trso	2	A	R		M-S	C2					"	X			
Greater Yellowlegs	Totanus melanoleucus	Tome	2	A	R		M-S	C2					"	Aquatic X			
Lesser Yellowlegs	Totanus flavipes	Tofl	2	A	R		M-S	C2					"	Aquatic X			
Pectoral Sandpiper	Erolia melanotos	Erme	2	I	R		M						"	X			
Baird's Sandpiper	Erolia bairdii	Erba	2	I	R		M						"	X			
Least Sandpiper	Erolia minutilla	Ermi	2	I	R		M-S						"	X			
Long-billed Dowitcher	Limnodromus scolopaceus	Lisc	2	I	R		M						"	X			
Semipalmated Sandpiper	Ereunetes pusillus	Erpu	2	I	R		M						"	X			
Spotted Sandpiper	Actitis macularia	Acma	4	E	C		M-S	C2		C2			"	X			
Western Sandpiper	Ereunetes mauri	Erma	2	I	R		M						Shoreline	X			

APPENDIX 3-B (Continued)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSIFICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRODUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Marbled Godwit	Limosa fedoa	Life	2	I	R		M						"	X		Mollusca & grasshoppers	
American Avocet	Recurvirostra americana	Ream	2	I	U		M-S			C2			"	X	Aquatic X		
Wilson's Phalarope	Steganopus tricolor	Sttr	2	A	C		M-S			C2			"	Aquatic insects & crustaceans			
Northern Phalarope	Lobipes lobatus	Lulo	2	A	U		M			C2			"	Aquatic insects & crustaceans			
California Gull	Larus californicus	Laca	2	I	R		M-S	C2					"	Aquatic		Earthworms	
Ring-billed Gull	Larus delewarensis	Lade	2	I	R		M-S	C2					"			Aquatic	
Franklin's Gull	Larus pipixcan	Lapi	2	C	R		M-S			C2			"	X		Earthworms	
Forster's Tern	Sterna forsteri	Stfo	2	A	R		M-S			C2			"	X		Minnows	
Black Tern	Chlidonias niger	Chni	2	A	R		M			C2			"	X		Crustaceans	
Rock Dove	Columba livia	Coli	3	E	U	CB	M-S		C2						Grain, Fruit, Shoots		
Mourning Dove	Zenaidura macroura	Zema	4	E	C	CB	M-S	C2			C1,C2,C	C1			X		Grain & Fruit
Screech Owl	Otus asio	Otas	10	E	R		YL				C1,C2,C			X		Birds & Mice	
Great Horned Owl	Bubo virginianus	Buvi	8	E	R		YL		C2		C1,C2,C					Rabbits, birds, rodents	
Pygmy Owl	Glaucidium gnoma	Glgn	10	D	R		YL				C2			X		Mice & Birds	
Great Gray Owl	Strix nebulosa	Stne	8	E	R		YL				C2			X		Rodents, lizards, birds	
Long-eared Owl	Asio otus	Asot	8	E	R		M-S				C2	C1				Mice	
Short-eared Owl	Asio flammeus	Asfl	4	E	R		M-S	C2						X		Mice	
Saw-whet Owl	Aegolius acadicus	Aeac	10	E	U		YE				C1,C2					Birds, Mice, Squirrel	
Common Night Hawk	Chordeiles minor	Chmi	4	F	C		S	C2			C1		C1,C2 buildings	X			

APPENDIX 3-B (Continued)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSI-FICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRO-DUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
White-threated Swift	Aeronautes saxatalis	Aesa	3	F	R		S		C2					X			
Black-chinned Hummingbird	Archilochus alexandri	Aral	8	F	U		S				C2			X	Flower Nectar		
Broad Tailed Hummingbird	Selasphorus platycercus	Sepl	8	F	U		S					C2		X		Nectar	
Rufus Hummingbird	Selasphorus rufus	Seru	8	F	U		S					C2		X		Nectar	
Calliope Humming-bird	Stellula calliope	Stea	7	F	U		S				C2			X		Nectar	
Belted Kingfisher	Megaceryle alcyon	Meal	11	A	U		YL		C2		C1					Fish	
Red Shafted Flicker	Colaptes cafer	Coca	9	F	C		YL				C2 snags C1 cav-ity			X	X		
Pileated Woodpecker	Dryocopus pileatus	Drpi	9	F	R		YL				C1,C2 cavity			X	X		X
Lewis' Woodpecker	Asyndesmus lewis	Asle	8	F	C		S				"			X	X		
Yellow-bellied Sapsucker	Sphyrapicus varius	Spva	8	F	U		S				"			X	X		
Williamson's Sapsucker	Sphyrapicus thyroideus	Spth	8	F	R		S				"			X			X
Hairy Woodpecker	Dendrocopos villosus	Devl	8	B	U		YL				"			X	X		
Downy Woodpecker	Dendrocopos pubescens	Depu	8	F	U		YL				decidu-ous C2 cavity			X	X		
Northern Three-toed Woodpecker	Picoides tridactylus	Pitr	8	F	R		YL				C1 coni-fer C2 cavity			X			
Eastern Kingbird	Tyrannus tyrannus	Tyty	8	F	U		S				C1,C2,C3		Buildings Poles	X	X		
Western Kingbird	Tyrannus verticalis	Tyve			U		S				C1,C2,C3		"	X	X		
Say's Phoede	Sayornis saya	Sasa	3	F	R				C2 Ledge			C3	Bridge Buildings	X			

APPENDIX 3-B (Continued)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSI-FICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRO-DUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Traill's Flycatcher	*Empidonax traillii*	Emtr	5	F	U		S					C2		X			
Hammond's Flycatcher	*Empidonax hammondii*	Emha	6	F	U		S				C1,C2,C3 C4 small	C2,C3,C4		X			
Dusky Flycatch	*Empidonax oberholseri*	Emob	5	F	U		S					C2,C3,C4		X			
Gray Flycatcher	*Empidonax wrightii*	Emwr	5	F	R		S				C1,C2,C3 C4	C2,C3,C4		X			
Western Flycatcher	*Empidonax difficilis*	Emdi	8	F	U		S				C1,C2,C3 C4 roots		Building	X			
Western Wood Peewee	*Contopus sordidulus*	Coso	8	F	U		S				C1,C2,C3 C4 forks			X			
Horned Lark	*Eremophila alpestris*	Eral	4	D	C		YL	C2						X	X		
Violet-green Swallow	*Tachycineta thalassina*	Tath	10	F	C		S				C2 cavity boxes			X			
Tree Sallow	*Iredoprocne bicolor*	Irbi	10	F	C		S				C2 cavity boxes			X			X
Bank Swallow	*Riparia riparia*	Riri	11	F	U		S		C2 banks					X			
Barn Swallow	*Hirundo rustica*	Hiru	3	F	C		S		C2				Bridges/ Building	X			
Cliff Swallow	*Petrochelidon pyrrhonota*	Pepy	3	F	A		S		C2				Building	X			
Rough-winged Swallow	*Stelgidopteryx ruficollis*	Stru	11	F	C		S		C2 Hole					X			
Gray Jay	*Perisoreus canadensis*	Peca	7	B	U		YL				C1,C2,C3 C4 conifer			X	X	X	X
Steller's Jay	*Cyanocitta stelleri*	Cyst	7	B	U		YL				"			X	X	X	
Black-billed Magpie	*Pica pica*	Pipi	8	B	A		YL				C1,C2,C3 C4	C1,C2,C3 C4			X	Other birds eggs and young	
Common Raven	*Corvus corax*	Coco	8	B	C		YL		C2		C2			X	X	Carrion	
Common Crow	*Corvus brachyrhnchos*	Cobr	8	B	C		YL				C2			X	X	X	X

APPENDIX 3-B (Continued)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSIFICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRODUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Clark's Nutcracker	*Nucifraga columbiana*	Nuco	7	B	C		YL				C1,C2,C C4 conifer			X	X	X	X
Black-capped Chickadee	*Parus atricapillus*	Paat	10	F	C		YL				C1,C2,C C4 hole/crevice			X	X		
Mountain Chickadee	*Parus gambeli*	Paga	10	F	A		YL				C1,C2,C C4 hole, crevice, snags			X			
White-breasted Nuthatch	*Sitta carolinensis*	Sicar	10	F	R		YL				C1,C2,C C4 woodpecker holes			X			
Red-breasted Nuthatch	*Sitta canadensis*	Sican	10	F	C		YL				C1,C2,C holes			X	X		
Pygmy Nuthatch	*Sitta pygmaea*	Sipy	10	F	U		YL				"			X	X		
Brown Creeper	*Certhia familiaris*	Cefa	8	F	U		YL				C2 under loose bark	C1,C3		X			
Dipper	*Cinclus mexicanus*	Cime	2	A	U		YL		C2				C2 logs	Aquatic Insects		Fish eggs & fry	
House Wren	*Troglodytes aedon*	Trae	8	H	U		S				C2 holes	C1,C3	Building	X			
Winter Wren	*Troglodytes troglodytes*	Trtr			R		S				C2 holes stump	C2		X			
Long-billed Marsh Wren	*Telmatodyte palustris*	Tepa	2	F	U		S			C1,C2,C3				X			
Canon Wren	*Catherpes mexicanus*	Came	3	P	U		YL	C2 rock areas	C2 ledges					X			
Rock Wren	*Salpinctes obsoletus*	Saob	3	F	U		S		C2 boulder areas					X			
Gray Catbird	*Dumetella carolinensis*	Duca	5	H	R		S					C1,C2,C3 C4		X	X	X	Fruits
Sage Thrasher	*Oreoscoptes montanus*	Ormo	5	F	R		S					C1,C2,C3 C4 sagebrush		X	X		Fruits

APPENDIX 3-B (Continued)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSI-FICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRO-DUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Robin	Turdus migratorius	Tumi	8	H	A		YL				C2,C2,C4		C2 Build ings	X	X	Earthworms	Fruit
Varied Thrush	Ixoreus naevius	Ixna	8	B	R		S				C1,C2,C C4			X	X		Fruit
Hermit Thrush	Hylocichla guttata	Hygu	8	F	U		S				C1,C2,C C4			X	X		
Swainson's Thrush	Hylocichla ustulata	Hyus	5	F	U		S					C1,C2,C3 C4		X	X		
Veery	Hylocichla fuscescens	Hyfu	5	F	U		S					C1,C2,C3 C4		X	X		
Mountain Bluebird	Sialia currucoides	Sicu	10	F	C		S				C2 snags holes			X	X		
Townsend's Soli-taire	Myadestes townsendi	Myto	4	F	R		YL		C2		C1,C2,C C4 roots			X	X		
Golden-crowned Kinglet	Regulus satrapa	Resa	8	F	U		YL				C1,C2,C C4 coni- fer branches			X			
Ruby-crowned Kinglet	Regulus calendula	Reca	7	F	U		Sp-S				"			X			
Water Pipet	Anthus spinoletta	Ansp	4	F	R		S	C2						X	X		
Bohemian Waxwing	Bombycilla garrula	Boga	8	F	C		W				C1,C2,C3 C4						Fruit
Cedar Waxing	Bombycilla cedrorum	Boca	8	F	C		S				C1,C2,C3 C4	C2		X	X		Fruit
Northern Shrike	Lanius excubitor	Laex	8	O	R		W							X		Birds & Mice	
Loggerhead Shrike	Lanius ludovicianus	Lalv	8	D	R		Sp-S				C2	C2		X		Birds & Mice	
Starling	Sturnus vulgaris	Stvu	8	H	A		YL				C2 holes		C2 Box/ Buildings	X	X		Fruit
Solitary Vireo	Vireo solitarius	Viso	8	F	R		S				C1,C2,C3 C4 coni- fer	C1,C2,C3 C4 ri- parian		X			

APPENDIX 3-B (Continued)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSIFICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRODUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Red-eyed Vireo	Vireo olivaceus	Viol	6	F	U		S				C1,C2,C3 C4 Deciduous	C1,C2,C3 C4 Riparian		X			
Warbling Vireo	Vireo gilvus	Vigi	8	F	U		M-S				C1,C2,C3 C4 Tops			X			
Orange Crowned Warbler	Vermivora celata	Vece	4	F	R		M-S	C2				C1,C2,C3 C4 Sage/Aspen		X			
Yellow Warbler	Dendroica virginae	Devi	8	F	C		M-S				C1,C2,C3 C4			X			
Yellow Rumped Warbler	Dendroica auduboni	Deau	7	F	C		S				C1,C2,C3 C4 Conifers			X			Fruit
Townsends Warbler	Dendroica townsendi	Deto	5	F	R		M					C1,C2,C3 C4		X			
MacGillivray's Warbler	Oporornis tolmiei	Opto	5	F	C		S					C1,C2,C3 C4		X			
Yellowthroat	Geothlypis trichas	Getr	2	F	R		S	June Vegetation C2 near water						X			
Yellow Breasted Chat	Icteria virens	Icvi	5	F	R		M-S					C1,C2		X			
Wilson's Wabler	Wilsonia pasilla	Wipa	5	F	U		M-S	C2				C1,C2		X			
American Redstart	Setophaga ruticilla	Seru	5	F	U		M-S				C1,C2	C1,C2		X			
House Sparrow	Passer domesticus	Pado	10	D	A		YL		Buildings					X	X Grain		
Bobolink	Dolichonyx oryzivorous	Poor	4	D	R		S							X			Weeds
Western Meadowlark	Sturnella neglecta	Stne	4	D	C		M-S	C2						X	X		
Yellow-headed Blackbird	Xanthocephalus xanthocephalus	Xaxa	2	E	C		M-S			C1,C2				X	X		Grain
Red Winged Backbird	Agelaius phoeniceus	Agph	2	E	A		M-S			C1,C2				X	X		Grain
Northern Oriole	Icterus bullockii	Icbu	6	F	R		M-S				C1,C2			X			Fruit

APPENDIX 3-B (Continued)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSI-FICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRO-DUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Brewer's Blackbird	Euphagus cyanocephalus	Eucy	5	D	C		M-S	C2				C1,C2		X	X		
Brown-headed Cow-bird	Molothrus ater	Moat	5	E	U		Sp-S		uses nests of other birds					X	X		Grain
Western Tanager	Piranga ludoviciana	Pilu	7	F	U		M-S				C1,C2 conifers			X			Fruits
Balck-headed Grosbeak	Pheucticus melanocephalus	Phme	8	F	R		M-s				C2			X	X		Buds & Fruit
Evening Grosbeak	Hesperiphona vespertina	Heve	7	B	C		YL				C1,C2 Conifer				X		Buds & Fruit
Pine Grosbeak	Pinicola enucleator	Pien	7	B	C		YL				C1,C2 Conifer						Buds & Fruit
Lazuli Bunting	Passerina amoena	Paam	5	F	U		M-S					C1,C2		X	X		Coniferous Leaf buds
Cassin's Finch	Carpodacus cassinii	Caca	7	B	U		YL				C1,C2 Conifer						
House Finch	Carpodacus mexicanas	Came	8	B	U		YL				C2			X	X		
Gray-crowned Rosy Finch	Leucosticte tephrocotis	Lete	3	B	C		YL		C2					X	X		Sedges
Black Rosy Finch	Leucosticte atrata	Leat	3	B	R		YL		C2					X	X		Sedges
Common Red Poll	Acantha flammea	Acfl	3	B	U		M-W								X		
Pine Siskin	Spinus pinus	Sppi	8	B	C		M-S				C1,C2				X		Bud
American Goldfinch	Spinus tristis	Sptr	8	B	U		YL				C2	C1,C2			X		Buds & catkins
Red Crossbill	Loxia curvivostra	Locu	7	B	U		YL				C1,C2,C3 Conifer			X	X		Cone Seeds
Snow Bunting	Plectrophenax nivalis	Plni			U		M-W								X		
Green Tailed Towhee	Chlorura chlorura	Chch	4	B	C		M-S	C2				C1,C2,C3		X	X		
Rufus-sided Towhee	Pipilo erythrophthalmus	Pier	4	B	U		M-S	C2				C1		X	X		
Oregon Junco	Junco oreganus	Juor	4	B	C		YL	C2				C1,C3		X	X		

APPENDIX 3-B (Continued)

BIRDS OF THE CHALLIS ES AREA

SPECIES		ALPHA CODE	LIFE FORM		RELATIVE ABUNDANCE	CLASSI-FICATION	SEASON OF OCCURRENCE	NESTING HABITS						FOOD HABITS			
COMMON NAME	SCIENTIFIC NAME		REPRO-DUCES	FEEDS				GROUND	CLIFF	TULES & REEDS	TREES	BUSH	OTHER	INSECTS & INVERTEBRATES	SEEDS & BERRIES	CARNIVOROUS	VEGETATION
Savanna Sparrow	Passerculus sandwichensis	Pasa	4	B	U		M-S	C2						X	X		
Grasshopper Sparrow	Ammodramus savannarum	Amsa	4	F	R		M-S	C2				C1		X	X		
Vesper Sparrow	Pooecetes gramineus	Pogr	4	F	C		M-S	C2				C1		X	X		
Lark Sparrow	Chondestes grammacus	Chgr	4	E	U		S	C2				C2		X	X		
Sage Sparrow	Amphispiza belli	Ambe	5	E	R		S					C1,C2		X	X		
Chipping Sparrow	Spizella passerina	Sppa	5	F	C		S					C1,C2		X	X		
Brewer's Sparrow	Spizella breweri	Spbr	5	F	C		S					C1,C2		X	X		
White-crowned Sparrow	Zonotrichia leucophrys	Zole	5	F	C		S	C2				C2		X	X		
Fox Sparrow	Passerella iliaca	Pall	2	F	R		S	C2				C1,C2		X	X		
Song Sparrow	Melospiza melodia	Meme	5	F	C		YL	C2				C1,C2		X	X		

APPENDIX 3-C

MAMMALS OF THE CHALLIS ES AREA

Species 1/			Life Form 2/				Habitat Occurrence 5/													
Common Name	Scientific Name	Alpha Code	Reproduces	Feeds	Relative Abundance 3/	Classification 4/	Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Masked Shrew	Sorex cinereus	Soci	4	E	C	UP			X O		X O		X O	X O				X O	X O	If, C1, C2, C3, C4
Water Shrew	Sorex palustris	Sops	2	A	U	UP			X O		X O							X O		C1, C2, C3, C4
Vagrant Shrew	Sorex vagrans	Sovs	2	E	*	UP												X O		IF, C1, C2, C3, C4
Dusky Shrew	Sorex Obscurus	Soob	4	E	*	UP								X O				X O		IF, C1, C3, C4
Merriam Shrew	Sorex merriami	Some	4	E	*	UP	X O	X O	X O	X O	X O	X O			X O		X O			DF, IF, C1, C2, C3, C4
Little Brown Bat	Myotis lucifugus	Mylu	3/10	F	*	UP								X O				X O	X O	IF
Small-footed Bat	Myotis subulatus	Mysu	3	F	*	UP								X O						IF
Long-eared Myotis	Myotis evotis	Myev	3/10	F	*	UP								X O						IF
California Myotis	Myotis californicus	Myca	3/10	F	*	UP								X O				X O		IF
Long-legged Myotis	Myotis volans	Myvo	3	F	*	UP	Buildings, rock ledges													IF
Big Brown Bat	Eptesicus fuscus	Epfu	3/10	F	*	UP	Mines, buildings							X O						IF
Silvery-haired Bat	Lasionycteris noctivagans	Lano	3/10	F	*	UP	Mines, buildings							X O						IF
Yuma Myotis	Myotis yumanensis	Myyu	3	F	*	UP	Mines, buildings													IF

APPENDIX 3-C (Continued)

MAMMALS OF THE CHALLIS ES AREA

Species 1/			Life Form 2/				Habitat Occurrence 5/														
Common Name	Scientific Name	Alpha Code	Reproduces	Feeds	Relative Abundance 3/	Classification 4/	Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Hoary Bat	*Lasiurus cinereus*	Laci	3/10	F	*	UP	Mines							X O						IF
Western Big-eared Bat	*Plecotus townsendi*	Plto	3	F	*	UP	Mines, buildings													IF
Spotted Bat	*Euderma maculata*	Euma	3	F	R	UP	Caves, buildings											O		IF
Black-tailed Jackrabbit	*Lepus californicus*	Leca	4/11	E	A	P	X O	X O	X O	X O	X O	X O	O		X O	X O	X O	O		DF, C1, C2, C3, C4
Richardson Ground Squirrel	*Citellus richardsonii*	Ciri	11	E	C	UP	X O	X O	X O	X O	X O	X O	X O		X O	X O				DF, IF, C1, C4
Townsend Ground Squirrel	*Citellus townsendii*	Cito	11	E	U	UP	X O	X O		X O		X O							O	DF, C1, C4
Golden-mantle Ground Squirrel	*Citellus lateralis*	Cila	11	E	A	g	X O	X O	X O	X O	X O	X O	X O					X O	X O	IF, C4
Least Chipmunk	*Eutamia minimus*	Eumi	8/11	B	A	g	X O	X O	X O	X O	X O	O	X O							DF, IF, C1, C4
Yellow Pine Chipmunk	*Eutamia amoenus*	Euam	8/11	B	*	g							X O	X O						DF, IF, C1, C4
Red Squirrel	*Tamiasciurus hudsonicus*	Tahu	10	B	*	g								X O						DF, IF, C1, C4
Northern Flying Squirrel	*Glaucomys sabrinus*	Glsa	10	B	*	g								X O						C4
Northern Pocket Copher	*Thomomys talpoides*	Thta	11	J	*	UP	X O	X O	X O		X O		X O					O	X O	DF, IF
Beaver	*Castor canadensis*	Caca	2	I	C	F												O		DF

APPENDIX 3-C (Continued)

MAMMALS OF THE CHALLIS ES AREA

Species 1/		Alpha Code	Life Form 2/		Relative Abundance 3/	Classification 4/	Habitat Occurrence 5/													Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Common Name	Scientific Name		Reproduces	Feeds			Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	
White-tailed Jackrabbit	Lepus townsendii	Leto	4/11	E	U	P	X O	X O	X O	X O	X O	X O	O		X O	X O	X O			OF, C1, C2, C3, C4
Snowshoe Rabbit	Lepus americanus	Leam	4/11	E	U	UP	X O	X O	X O		X O		X O	O				X O		OF, C1, C2, C3, C4
Mountain Cottontail	Sylvilagus nuttallii	Synu	4/11	E	A	G	X O	X O	X O		X O	X O	X O		X O		X O	X O		OF, IF, C1, C2, C3, C4
Pigmy Rabbit	Sylvilagus idahoensis	Syid	4/11	E	U	G	X O						X O				X O	O		OF, C1, C2, C3, C4
Pika	Ochotona princeps	Ocpr	4/11	E	U	g	Rockslides													DF, C1, C4
Yellow-bellied Marmot	Marmota flaviventris	Mafl	11	E	A	UP	X O	X O				O	X O				X O	O	O	OF, C1, C4
Hoary Marmot	Marmota caligata	Maca	11	E	U	UP		X O				X O								OF, C1, C4
Columbian Ground-squirrel	Citellus columbianus	Cico	11	E	A	UP			X O		X O		X O				X O	O	X O	DF, C1
Northern Grasshopper Mouse	Onychomys leucogaster	Onle	4	E	*	UP	X O	X O	X O	X O	X O	X O	X O		X O	X O	X O	X O		IF, C1, C4
Deer Mouse	Peromyscus maniculatus	Pema	4	E	A	UP	X O	X O	X O	X O	X O	X O	X O		X O	X O	X O	X O		IF, OF, C4
Bushy-tailed Wood Rat	Neotoma cinerea	Neci	4	E	*	UP	Rim-rock & rock slides													OF, C1, C4
Desert Wood Rat	Neotoma lepida	Nele	4	E	*	UP	X O	X O	X O	X O	X O	X O	X O		X O	X O	X O			DF, C1, C4

APPENDIX 3-C (Continued)

MAMMALS OF THE CHALLIS ES AREA

Species 1/		Alpha Code	Life Form 2/		Relative Abundance 3/	Classification 4/	Habitat Occurrence 5/													Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Common Name	Scientific Name		Reproduces	Feeds			Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	
Mountain Phenacomys	Phenacomys intermedius	Phin	4	E	*	UP								X O						DF, C1, C2, C3, C4
Boreal Red-backed Vole	Clethrionomys gapperi	Clga	4/8	B	*	UP								X O				X O		DF, C1, C3, C4
Meadow Vole	Microtus pennsylvanicus	Mipe	2	E	A	UP								X O				X O		DF, C1, C2, C3, C4
Longtail Vole	Microtus longicaudus	Milo	2	E	*	UP							X O					X O		DF, C1, C2, C3, C4
Mountain Vole	Microtus montanus	Mimo	4	E	*	UP													X O	DF, C1, C2, C3, C4
Richardson Vole	Microtus richardonsi	Miri	2	E	*	UP												X O		DF, C1, C2, C4
Sagebrush Vole	Lagurus curtatus	Lacu	4	E	*	UP	X O	X O	X O	X O	X O	X O					X O			DF, C1, C3
Great Basin Pocket Mouse	Perognothus parvus	Pepa	4	E	*	UP	X O	X O	X O	X O	X O	X O	X O							DF, IF, C1, C2, C3, C4
Muskrat	Ondatra zibethica	Onzi	2	I	C	F												X O		O
Ord's Kangaroo Rat	Dipodomys ordii	Dior	4	E	*	UP	X O	X O	X O	X O	X O	X O	X O		X O	X O	X O	X O		DF, IF, C1, C3, C4
Western Jumping Mouse	Zappus princeps	Zapr	4	E	*	UP												X O		IF, C1, C2, C3, C4
Porcupine	Erethizon dorsatum	Erdo	8	B	U	UP	X O	X O				X O	X O	X O				X O		C4

APPENDIX 3-C (Continued)

MAMMALS OF THE CHALLIS ES AREA

Species 1/			Life Form 2/				Habitat Occurrence 5/													
Common Name	Scientific Name	Alpha Code	Reproduces	Feeds	Relative Abundance 3/	Classification 4/	Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
House Mouse	Mus musculus	Mumu	4	E	*	UP	Man-made structures													DF, IF, C1, C2, C3, C4
Black Bear	Ursus americanus	Uram	4	E	U	G							X O	X O						O
Racoon	Procyon lotor	Prlo	2/8	I	U	F												X O		IF
Marten	Martes americana	Maam	7	B	R	F								X O						IF, C1, C4
Shorttail Weasel	Mustela frenata	Mufr	2	E	*	P							X O					X O	O	IF, C1, C4
Mink	Mustela vison	Muvi	2	I	U	F												X O		IF, C1, C4
Spotted Skunk	Spilogale putorius	Sppu	4	E	U	P												X O		IF, C1, C4
Striped Skunk	Mephitis mephitis	Meme	4	E	C	P												X O	O	IF, C1, C4
Badger	Taxidea taxus	Tata	11	J	C	UP	X O	X O		X O		X O	X O		X O	X O		X O	O	IF, C1
Red Fox	Vulpes fulva	Vufu	4	E	U	F												X O	O	IF, C1, C4
Coyote	Canis latrans	Cala	4	E	C	P	X O	X O	X O	X O	X O	X O	X O	X O	X O	X O	X O	X O	X O	IF, C1, C4
Mountain Lion	Felis concolor	Feco	4	E	R	G	X O	X O		X O		X O		X O				O	O	IF
Bobcat	Lynx rufus	Lyru	4	E	R	F/S	X O	X O	X O	O	X O	X O	X O					O		IF
Lynx	Lynx canadensis	Lyca	4	E	R	R/S	Rough terrain, canyons													IF
River Otter	Lutra canadensis	Luca	1	A	U	F/S												X O		C1, C4

APPENDIX 3-C (Continued)

MAMMALS OF THE CHALLIS ES AREA

Species 1/			Life Form 2/				Habitat Occurrence 5/													
Common Name	Scientific Name	Alpha Code	Repro- duces	Feeds	Relative Abundance 3/	Classification 4/	Wyoming Big Sage	Mountain Big Sage	Basin Big Sage	Low Sage	Black Sage	Three-tipped Sage	Mountain Mahogany	Douglas Fir	Shadscale	Nuttall Salt Brush	Nuttall Tansy	Cottonwood/ Riparian	Wet Meadows	Impacts resulting from disturbance of vegetation and/or presence of livestock 6/
Elk	Cervus canadensis or elaphus	Ceca	4	E	U	G	X O	X O	X O	X O	X O		X O	X O				O	O	OF, C1, C3, C4, B, W, R
Mule Deer	Odocoileus hemionus	Odhe	4	E	C	G	X O	X O		X O		X O		X O				X O	O	OF, C1, C2, C4, B,W,R
Pronghorn Antelope	Antilocapra americana	Anam	4	E	A	G	X O	X O	X O	O	X O	X O			X O	X O	X O	O	O	OF, C1, C4, B, W, R
Bighorn Sheep	Ovis canadensis	Ovca	3	E	U	G		X O	O	X O	O		O		O	High Slopes				OF, C1, C4, B, W, R
Moose	Alces alces	Alal	4	E	R	G								X O				X O	O	OF, C1, C4, B, W, R
Mountain Goat	Oreamnos americanus	Orsm	3	E	R	G	High cliffs													OF, C3, C4, B, W, R

1/ Bernard, Stephen R. and Kenneth F. Brolon 1977. Distribution of Mammals, Reptiles, and Amphibians by BLM Physiographic Regions and A. W. Kuchler's Associations for the Eleven Western States. Tech. Note 301. US Department of the Interior, Bureau of Land Management.

2/ Refer to Appendix for Life Form descriptions.

3/ A = Abundant - Observed everytime a person visits its habitat at the proper season.
C = Common - Observed most of the time a person visits habitat at the appropriate season.
U = Uncommon - Not observed regularly in its habitat. Habitat may be limited.
R = Rare - Rarely observed. Species occupies a small percentage of its preferred habitat or habitat is extremely limited.
* = Present but current abundance unknown.

4/ G = Game Animal
F = Fur Bearer
P = Predatory Animal
GB = Game Bird

g = Protected Non-game
UP = Unprotected
S = Sensitive Species

5/ X = Reproduction
O = Feeding

6/ OF = Direct Food Competition
IF = Indirect Food Competition
W = Competition for Water
B = Competition Creates Behavorial Impacts
C = Competition for Cover

C1 = Resting Cover
C2 = Nesting Cover
C3 = Thermal Cover
C4 = Escape Cover

APPENDIX 3-D

DIRECTION OF STRUCTURAL DEVELOPMENT DUE TO PROPOSED MANAGEMENT ACTIONS

Discrete Management Action	Grass/ Forb	Low Shrub	Tall Shrub	Tree	Tree/ Shrub
Livestock Grazing	↔	↔	↔	—	←
Controlled Burning	←	←	←	←	←
Seeding and Planting					
(a) Grasses	→ ←	←	←	←	←
(b) Grasses/Forbes	← →	←	←	—	—
(c) Shrubs	→	—	—	—	—
(d) Trees	→	→	→	—	—

→ Advances Succession

← Retards Succession

↔ Advances or Retards Succession on type or level and intensity of application.

— No effect on Succession.

APPENDIX 3-E

DETERMINING DISPLACEMENT AND REPLACEMENT OF WILDLIFE

1. Locate the proposed discrete management action in Appendix 3-D.

2. Locate the structural stage of the vegetation where the discrete action is to occur (refer to Vegetation Map, Chapter 2).

3. Using Appendices 3-A, 3-B and 3-C predict what wildlife species are most likely to occur in the vegetation type/structural stage where the discrete action is to occur.

4. (a) Locate, from Appendix 3-D, which way the present plant community will be altered and what the next structural stage will be.

(b) Mentally note what vegetation and structural stages will be lost in the change.

(c) Now go to the list made in Step 3 and locate those species dependent on plants and structural stages identified in Step 4b. These will be the wildlife species one would predict to be lost or displaced.

5. Locate all wildlife species associated with the new plants and structural stage identified in 4a and note species not found in the sagebrush/grass stage. These will be the wildlife species predicted to replace the ones previously displaced.

6. Determine the trade-off (environmental, economical, social, etc.) of gaining and losing certain species and determine the impacts.

Example: A controlled burn is proposed in a Wyoming big sage/bluebunch wheatgrass area in the East Fork Allotment.

1. Discrete action is a controlled burn (given).

2. Structural stage is low shrub (Map 2-1, Chapter 2, was referred to).

3. Wildlife species present are bighorn sheep, sagebrush lizard, Brewer's sparrow, vesper sparrow, least chipmunk.

4. Present plant community will revert to a grass/forb structural stage and stage and sagebrush will be the main vegetation destroyed (Columns 1 & 2, Appendix 3-D). Those species in Step 3, dependent on or principally associated with sagebrush, are the sagebrush

lizard and Brewer's sparrows. One would predict these species to be displaced or lost.

5. Wildlife species in the new vegetation community and structural stage are the Savannah sparrow, sagebrush lizard, least chipmunk, etc. The Savannah sparrow is the only species that is new and has now replaced the displaced species.

6. Impacts are low since lost and replaced species are common and abundant in the area. The burning has higher benefits to bighorn sheep since it provides additional forage to the sheep. Sheep are a big game species and have high consumptive and nonconsumptive values. Draw your own conclusions on trade-offs.

APPENDIX 3-F

CRITERIA FOR BIG GAME HABITAT CONDITION CLASSIFICATION

Bighorn Sheep, Elk

Good bighorn sheep and elk winter habitat in the Challis Environmental Impact Statement Area is represented by climax perennial grass/shrub associations (bluebunch wheatgrass/sagebrush). Therefore, habitat condition was based on the ecological condition classification system explained in appendix and conducted in 1977. Future habitat condition projections are also based on inventory and ecological potentials from the 1977 survey.

Good ecological condition = good elk and bighorn winter habitat
Fair ecological condition = fair elk and bighorn winter habitat
Poor ecological condition = poor elk and bighorn winter habitat

Deer, Antelope

Habitat condition classification is based on the 176 "Cole" browse transects consisting of 8,800 sample points in the Challis Planning Unit. The transects determined condition class of shrubs by measuring the amount of hedging, age class and plant dimensions of palatable shrub species (palatable to big game). Classification of habitat condition is as follows:

Good - Desirable plant less than 16% severely hedged.
Age Structure: Number of decadent plants minus number of young plants not equalling greater than 35% of the plants measured.

Fair - Desirable plants less than 17-35% severely hedged.
Age Structure: Decadent plants minus seedlings comprising less than 35% of plants measured.

Poor - Severe hedging on 36% or more of the plants sampled.
Age Structure: Decadent plants minus young plants is greater than 35% of the total plants measured.

APPENDIX 4-A

CRITERIA FOR EVALUATING CHALLIS UNIT STREAM CONDITIONS

A. Stream Shade (June-September; 11:00 a.m. - 5:00 p.m.)

Numerical Rating

4 (Excellent)	Shade from 80-100%
3 (Good)	Shade from 60-80%
2 (Fair)	Shade from 40-60%
1 (Poor)	Shade from 0-40%

B. Streambank Condition (Vegetation)

Numerical Rating

4 (Excellent)	No negligible use/damage; vegetation (primarily grasses, sedges and forbs) well-rooted; sod intact; very little, if any erosion from vegetation areas; less than 5% bare soil showing.
3 (Good)	Some use/damage; vegetation generally well-rooted; sod mostly intact; soil showing in places (6% to 15% bare soil showing overall); some surface erosion evident.
2 (Fair)	Use of damage close to sod; vegetation shallow rooted; moderate surface erosion (15% to 25% bare soil showing overall).
1 (Poor)	Heavy to severe use/damage; vegetation generally cropped to sod; considerable soil showing (over 25%) with sod damage serious; active surface erosion a serious problem.

C. Streambank Stability

Numerical Rating

4 (Excellent)	Bank Stable and Undamaged - Partial or no evidence of bank damage; 90-100% of bank area free from use/damage. Little or no unnatural bank erosion or sloughing present.
3 (Good)	Bank Damage 20% or Less - Banks 80-90% free from use/damage. Some erosion and sloughing but fully recoverable after a season of rest.
2 (Fair)	Bank Damage 40 Percent or Less - Banks having received 20-40% damage from use/damage. Moderate to heavy bank erosion and sloughing during season(s) of use, and which continues during no use period(s). Conditions will not allow natural stability recovery of banks to a level greater than 60% stability.

1 (Poor)	Bank Damage Excessive - Banks exhibiting greater than 40% damage. Severe bank damage and accelerated erosion and sloughing is present over virtually the entire bank surveyed. No evidence of bank recovery visible, and erosion is consistent.

D. Stream Channel Stability

Numerical Rating

4 (Excellent)	No or negligible lateral channel movement and bank erosion (cutting) (5%), scour, or changing channels.
3 (Good)	Some lateral channel movement and bank erosion (5-10%), minor channel scour or changing channels within streambed.
2 (Fair)	Frequent lateral channel movement (10-15%); moderate channel scour or channel change within streambed.
1 (Poor)	More than 20% lateral channel movement and bank cutting, changing channels and severe scour evident, and source of extreme sedimentation.

E. Siltation of Streambed (Percent of "fine" sediments covering streambed)

Numerical Rating

3 (Excellent)	Less than 10%
2 (Fair-Good)	10-25%
1 (Poor)	More than 25%

Total numerical scores determine overall stream condition rating:

Total Numerical Score	Overall Stream Condition
17+	Excellent
14-16	Good
10-13	Fair
5-9	Poor

APPENDIX 4-B

FISH SPECIES IN CHALLIS PLANNING UNIT

Anadromous Fish

Species	Scientific Name	Habitat in Unit
Chinook Salmon	Oncorhynchus tshawytscha	Rivers, streams
Sockege Salmon	Oncorhynchus nerka	"
Steelhead Trout	Salmo gairdneri	"
Lamprey	Entosphenous tridentatus	"

Resident Fish

Mountain Whitefish	Prosopium williamsoni	"
Cutthroat Trout	Salmo clarki	Rivers, streams, lakes
Rainbow Trout	Salmo gairdneri	"
Brook Trout	Salvelinus fontinalis	Streams
Dolly Varden Trout	Salvelinus Malma	Rivers, streams, lakes
Squawfish	Ptychocheilus oregonensis	Rivers
Redside Shiner	Richardsonius balteata	"
Mountain Sucker	Catostomous platyrhychus	"
Sculpin	Cottus sp.	Rivers, streams

APPENDIX 4-C
ECONOMIC ANALYSIS OF CHALLIS PLANNING UNIT FISHERIES

Anadromous fish produced in the Columbia River system are worth an estimated $100 million each year to the Pacific Northwest (Tuttle]978). Mallet and Bjornn (1970) estimated that Idaho spawning grounds account for 55 percent of the steelhead, 34 percent of the spring chinook, and 41 percent of the summer chinook in the entire drainage. Historically, the Salmon River watershed has produced about 50 percent of the steelhead and 98 percent of the salmon harvest in Idaho (Mallet and Bjornn 1970).

Chinook salmon are the most valuable fisheries resource in the Challis Planning Unit. An economic analysis of the chinook fishery presented in the 1977 Challis Environmental Impact Statement (EIS) was based on Tuttle et. al's. (1975) net annual value of $143.76 per spawning salmon. Most of the value represented by salmon spawning in the unit is realized by commercial fishermen in the Pacific Ocean.

Idaho Fish and Game spawning ground surveys indicate at least 180 summer chinook and 245 spring chimook redds can be attributed to the unit each year. These counts probably approximate no more than one-half of the actual number of redds (Reingold, 1973), so about 850 salmon redds are constructed in the unit annually. Bjornn (1975) found there were 1.3 males for each female spawner; each redd constructed represents 2.3 adult fish. Therefore, an estimated annual run of 1955 salmon spawns in the Challis Planning Unit.

Tuttle et. al. (1975) calculated that each spawning salmon had a net annual value of $143.76. This value has been corrected to $176.11 per fish assuming an annual inflation rate of seven percent. The 1955 spawning salmon in the unit would have an annual net value of $344,295. This estimate is conservative because redds are not counted in all areas where salmon spawn.

No attempt was made in the 1977 Challis EIS to evaluate the annual net value of the steelhead or resident trout fishery in the unit. The Idaho Department of Fish and Game estimates that approximately 1,166 wild steelhead spawn each year in the Salmon River drainage above the Lemhi river confluence (1970-1977 average). Almost all (97 percent) these fish move above the Pahsimeroi River confluence and into the Challis Planning Unit. An assumption was made that 30 percent of these fish spawn in the unit, for a wild steelhead run of 339 fish.

Tuttle et. al. (1975) calculated a value of $149.24 per spawning steelhead in the Columbia River drainage. The 1978 value would be $182.83 per fish after adjusting for an annual inflation rate of seven percent. The estimated 339 spawning steelhead in the Challis Planning Unit represent a net annual value of $61,979 to the fishery.

An estimated 10,000 visitor days were spent fishing in the Challis Planning Unit in 1974 (USDI, BLM 1977). Salmon and steelhead fishing accounted for 1,739 angler days (USDI, BLM 1977) and 8,261 visitor days were spent fishing for resident trout. It is assumed that fishing pressure has not declined since 1974, an extremely high water year; the opposite is probably true.

Gordon et. al. (1973) calculated the value of one trout fisherman day to be $10.60. This value would be $14.86 per day in 1978, after adjusting for annual inflation rates of seven percent. Multiplying this value times 8,261 fisherman days yields an annual value of $122,758 for the resident fishery in the unit. In contrast to the salmon fishery, most of the resident fishery value is funneled into the local economy.

Combining the estimated values for salmon ($344,295), steelhead ($61,979), and resident fish ($122,758), the total annual net economic value of the consumptive fishery in the Challis Planning Unit is $529,032. No attempt has been made to evaluate the economic value of non-consumptive uses of the fishery resource.

Fishery values from streams in the Challis Planning Unit are derived from the entire unit and can not be allocated to stream sections bordered by private or public lands.

APPENDIX 5

FORAGE UTILIZATION OVERLAP FOR CATTLE AND WILD HORSES

Interspecific Competition. A diet similarity index (based on fecal analysis), between cattle and horses in the Challis wild horse area was calculated by Dr. Richard Hansen of Colorado State University. Diet similarities are expressed as a percentage. For example, 68 percent (below) indicates that during the spring, horse and cattle diets overlap 68 percent of the time.

Cattle (grazing season-long)	Horse Spring	68.0%
Cattle (grazing season-long)	Horse Summer	65.3%
Cattle (grazing season-long)	Horse Fall	61.4%

Both cattle and horses primarily subsist on grasses, and, therefore, the degree of dietary overlap is substantial.

Habitat overlap between wild horses, wildlife and cattle is keenest around water, in wet meadow areas and other overlap areas where animals tend to concentrate.

APPENDIX 6-A

THE DYRAM MODEL

DYRAM the model used in determining secondary impacts uses industry earnings in combination with a 20-sector industry expected transaction matrix, compiled from the national input-output table, in order to estimate net exports or imports by industry for the economy of a given area. Multipliers for each industry are computed; they refer to impacts on personal income, not business income. The reader is directed to *The Annals of Regional Science*, November 1975, pp. 44-50, for a detailed mathematical explanation of the model.

APPENDIX 6-B

METHODOLOGY FOR SOCIAL ASSESSMENT

Two BLM social scientists conducted a total of twelve interviews with residents of the Challis area during the week of June 12-16, 1978. In all, 13 persons were interviewed, one conversation having included two respondents. For purposes of tabulating respondent comments, the remarks of the two respondents interviewed together have been counted as one.

Nine interviews were done on the telephone from Washington, D.C., while three were face-to-face in Challis. A purposive, rather than a random sample was used for this study. The approach taken was dictated primarily by time constraints and Office of Management and Budget (OMB) restrictions on the use of structured (i.e., questionnaire-based) surveys. Caution is urged in viewing results of this study as fully representative of the views of all residents of the Challis Planning Unit. Respondents were selected because of their active roles in the affairs of the area. Two were Custer County Commissioners, three were state legislators (none of whom resided in Custer County but who presently or previously represented the area), three were leaders of cattlemen's associations, three were leaders in a group appointed by the County Commission, the Resource and Economic Stabilization Committee, one represented the town of Challis, and one was a local news representative. Half the respondents run a significant number of livestock (over 100 head), and three are current users of public land for grazing.

The sociological data presented in the Supplement were derived from guided conversations rather than formalized or structured interviews. The interviewers had in mind several topics to cover, but the content of the discussions varied and not every topic was covered in each interview. Field notes were taken during the conversations and later content-analyzed. The following tables display selected comments and the number of interviews in which the gist of each was repeated. Comments were listed if they seemed significant to the interviewer, recurred in several of the interviews, or were especially emphasized by the respondent(s). A comment is counted only once per interview; but a number of different comments from each interview, including some which may not seem to go together, were listed. (An example is: several respondents said they would prefer to keep a lot of outsiders from moving into the area, but also said they would be hospitable to newcomers who fit into the community.)

The interviews contained a heavy emotional element that may not fully emerge in the analysis. Respondents had just learned of BLM's plans to make significant reductions in allowable grazing on public lands, and many of them were feeling very angry. The emphasis and focus of respondents' remarks was probably influenced strongly by the timing of the interviews. Permittees to be affected by the proposed action had probably not had time to thoroughly think through their options for reactions to reductions, hence predictions of their actions did not appear altogether firm or fully coherent. Interviews conducted either earlier or later would probably have differed significantly in content and tone from those used in this analysis.

All the respondents were glad to participate in the study and expressed gratification that BLM was actively seeking their views on an individual basis. Several of them complained the interviews had not been done earlier, prior to the Challis ES and/or prior to the Bureau's delineation of the current proposed action.

Despite the many limitations of the data and analysis, the strong agreement between respondents suggests the information may be representative of the actual attitudes and values of many residents of the Challis Planning Unit.

TABLE A

STATEMENTS ON RELATIONS WITH GOVERNMENT

Essential Content of Statements	Number Making Statement *
Over 96% of the County is owned by government; therefore, it has a small tax base, dependent on government actions.	9
Various government restrictions create difficulties for Custer County residents (EPA, OSHA, Corps of Engineers, FS, BLM, Idaho Fish and Game, etc.).	5
Because of government domination, residents feel helpless to control the destiny of the area.	5
Government provides public participation mechanisms only to comply with regulations. Our views aren't taken into account by decisionmakers.	6
Government hasn't dealt with us honestly; you can't trust the word of officials.	4
Local, knowledgeable officials don't have the authority to make decisions, which are made elsewhere (Denver or Washington, DC) for political reasons.	4

TABLE B

STATEMENTS ON ECONOMIC CONDITIONS IN CUSTER COUNTY

Over 96% of the County is owned by government; therefore, it has a small tax base, dependent on government actions.	9
The county economy depends on BLM grazing.	2
Wilderness study area designations thwart development, hurt the tax base by removing land from tax rolls.	3
Wilderness and National Recreation Areas don't bring tourist money in. Visitors don't buy things here.	2
Scenic easements hurt the tax base by precluding improvements and increased assessed valuation on land.	4
Subdivision would help county tax base.	4
Young people are leaving the area due to lack of economic opportunity.	5
Ranching is almost impossible for young people to break into unless they inherit or marry into property.	7

TABLE C

STATEMENTS ON GROWTH AND DEVELOPMENT

Essential Content of Statements	Number Making Statement *
Land ownders would sell to subdividers very reluctantly, only to survive financially.	8
One rancher in East Fork sold out to a developer and moved away.	5
Land owners would prefer to get money for scenic easements from government as survival mechanism rather than subdivide.	4
Subdivision would help county tax base.	5
Subdivision and recreational development are forcing longtime residents off their land.	2
Subdivision hurts wildlife: More people, their dogs, their vehicles ruin habitat.	4
Subdivision wouldn't affect wildlife. Animals adjust to development if not harrassed.	1
Local people like country living, don't like crowded conditions, or urban life.	8
Local people don't want a lot of outsiders moving into area.	6
Local people would accept compatible outsiders who fit into and contribute to community life.	6

TABLE D

STATEMENTS ON PROBABLE RESPONSES TO CUTS IN BLM GRAZING PRIVILEGES

Most ranchers will hang on; they're tough, they've survived things this bad or worse.	2
Those who are cut will have to reduce their herd size.	3
Those who are out of debt have a better chance to survive.	3
Larger ranchers (over 250 head) have a better chance of surviving cuts.	1
People will subdivide (sell out completely or sell bits and pieces of land) to survive.	8

STATEMENTS ON PROBABLE RESPONSES TO CUTS IN BLM GRAZING PRIVILEGES (continued)

Essential Content of Statements	Number Making Statement *
People would prefer a scenic easement to subdivision as a means of surviving cuts.	4
The economy of the county and town of Challis depends on BLM grazing.	5
Ranches will be bought by outsiders and consolidated.	1
Consolidation is not a trend here.	4
Tax delinquency increased last year due to low cattle prices. BLM cuts would further increase tax delinquency.	2

TABLE E

STATEMENTS ON WILDILFE

The trend toward subdivision (which would be accelerated by BLM grazing cuts) would harm wildlife BLM is interested in protecting.	5
Development doesn't necessarily harm wildlife. They adjust unless harrassed.	1
There are too many wild horses, increasing at rapid rate, encroaching on ranges of other wildlife.	8
Those promoting protection of wild horses come from far away and don't understand the situation.	2
The government's preference for wild horses over livestock is wrong (i.e., in allocating AUMs).	7
Local people have been protecting wildlife.	3

TABLE F

STATEMENTS ON WILDERNESS AND RECREATION AREAS

Essential Content of Statements	Number Making Statement *
Scenic easements hurt the county tax base by precluding improvements on land.	4
Scenic easements are being sought by ranchers to get money to survive BLM cuts. Preferred to subdivision.	4
Wilderness and National Recreation areas are accessible only to the well-off, not to old, or people without transportation.	2
Wilderness and NRA don't bring in tourist money. Visitors don't buy in area.	2
Wilderness and NRA hurt county tax base by taking still more private land off tax rolls.	3
The government has decided to make this area a playground at the expense of local residents.	3

TABLE G

STATEMENTS ON MOTIVATION FOR RANCHING

Independence, being one's own boss is important.	4
It's the only life we know, many are apprehensive about starting anew.	5
It's a good way of life.	3
It's a tradition of several generations.	4
We like the work, working with livestock.	1
We just love the land and the country.	1
It's a great way to raise kids.	1
Like to be outdoors.	1

Three respondents were asked: Would you go into ranching if you had it to do over? Yes 2; No 1

TABLE H

STATEMENTS ON THE MOST IMPORTANT QUALITY LOOKED FOR IN OTHERS

Essential Content of Statements	Number Making Statement *
Honesty and integrity.	6
Ability to communicate.	2
Ability to carry out promises.	1
Neat appearance.	1

* Numbers and categories are not mutually exclusive. One person may have made more than one of the statements listed.

APPENDIX 7

GLOSSARY

Association, soil. A group of soils geographically associated in a characteristic repeating pattern.

Complex, soil. A mapping unit consisting of different kinds of soils that occur in such small areas or in such an intricate pattern that they cannot be shown separately at the map scale being used.

Consociation, soil. A mapping unit consisting of one major soil with a few minor inclusions of other soils.

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